



NASA AMES DEVELOPMENT PLAN
FINAL PROGRAMMATIC
ENVIRONMENTAL IMPACT STATEMENT



APPENDIX B: TRAFFIC APPENDIX

NASA AMES RESEARCH CENTER

JULY 2002



DESIGN, COMMUNITY & ENVIRONMENT

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A P P E N D I X B I

DRAFT TRANSPORTATION
DEMAND MANAGEMENT
PROGRAM





NASA AMES DEVELOPMENT PLAN

NASA RESEARCH PARK AND BAY VIEW

TRANSPORTATION DEMAND MANAGEMENT PLAN

D*R*A*F*T R*E*P*O*R*T

July 2002

Submitted by



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1. Introduction

1.1 NRP TDM Plan Purpose

The Transportation Demand Management (TDM) Program for the NASA Research Park (NRP) and Bay View has been developed to:

- 1.1.1 Support NASA's sustainable development goals;
- 1.1.2 Provide a transportation infrastructure that supports a pedestrian-oriented environment;
- 1.1.3 Reduce vehicle trips to the site to minimize the traffic and environmental impacts of the land uses; and
- 1.1.4 Increase the attractiveness of the site by increasing transportation choices.

1.2 NRP TDM Plan Applicability

1.2.1 The requirements of this NRP TDM Plan apply to all partners, lessees, permittees, concessioners, cooperators, and other tenants located in the NASA Research Park and Bay View areas pursuant to the NASA Ames Development Plan Environmental Impact Statement (NADP EIS). At its sole and absolute discretion, NASA may adjust from time to time the total square feet subject to this NRP TDM Plan. Figure 1-1 shows the site.

1.2.2 This area includes the NASA Research Park (NRP), approximately 3,029,000 square feet of educational, office, research and development, museum, conference center, housing and retail space covered under the conditions of the NASA Ames Development Plan EIS.

1.2.3 This area also includes the Bay View district, approximately 1,240,000 square feet of residential, retail, child care, and support services covered under the conditions of the NASA Ames Development Plan EIS.

1.3 TDM Plan Authority

1.3.1 The approval documents for the NASA Ames Development Plan (NADP) that govern adherence to, and participation in, this TDM Plan are the Space Act Agreement and Lease Agreement signed by each partner/lessee.

1.3.2 This TDM Plan is also governed by Executive Order 13148, "Greening the Government Through Leadership in Environmental Management. EO 13148 charges each Federal agency to ensure "...that all necessary actions are taken to integrate environmental accountability into agency day-to-day decision-making and long-term planning process, across all agency mission, activities, and functions. Consequently, environmental management considerations must be a fundamental and integral component of Federal Government policies, operations, planning, and management." This TDM Plan complies with EO 13148 by developing strategies to reduce vehicle trips, which reduces emissions of nitrogen oxides and hydrocarbons, thereby reducing ground-level ozone. Vehicle trip reduction reduces paving of land. Excessive paving disrupts groundwater cycles, increases temperatures, and increases the flow of contaminants to surface waters. Vehicle trip reduction is also one step toward reducing dependence on fossil fuel, which is inherently unsustainable.

1.4 Other Approved or Proposed Development at the NASA Ames Research Center

1.4.1 Ames Campus and Eastside Airfield Districts: The NADP also proposes limited development located within the Ames Campus (500,000 square feet of office, high density R&D uses) and the Eastside Airfield (12,000 for the relocation of the Moffett Field control tower). Development in these areas will remain behind the NASA fence line and is not subject to the TDM programs or trip generation targets laid out in this TDM plan. Employees and employers located in these two areas of the Ames Research Center will be offered the existing and future NASA Ames Campus TDM programs. These TDM programs are separate from those described in this plan.

1.4.2 The 1994 Comprehensive Use Permit Environmental Assessment (“CUP EA”):

This includes approximately 120,000 square feet for the Carl Sagan Center for the Study of Life in the Cosmos and 600,000 square foot Lockheed Martin Development area, as well as 167,000 square feet of additional development identified pursuant to the CUP EA, located entirely within the NRP.

1.5 Consistency Among TDM Plans

1.5.1 While this NRP TDM Plan is an independent requirement of the NADP EIS to ensure that the projects minimize their traffic and air quality impacts, the proposed TDM Plan under the CUP EA (CUP EA TDM Plan) will be designed to be consistent with this NRP TDM Plan.

1.5.2 Pursuant to the individual lessee's ("Lessee's") Space Act Agreement with NASA and Lease with NASA, uses under the CUP EA would be subject to the requirements of the "CUP EA TDM Plan." Phases 1 through 4 identified in the CUP EA TDM Plan are identical to Phases 1 through 4 identified in the NRP TDM Plan. Once development moves into Phase 1, all land uses within the proposed NRP would be subject to the exact same TDM requirements.

1.5.3 Proposed development on the "Ames Campus" and "Eastside Airfield" will remain behind the NASA fence line and is not subject to this NRP TDM Plan. Employees and employers located in these two areas of the Ames Research Center will be offered the existing and future NASA Ames Campus TDM programs. These TDM programs are separate from those described in this Plan.

1.6 Program for a Single Plan

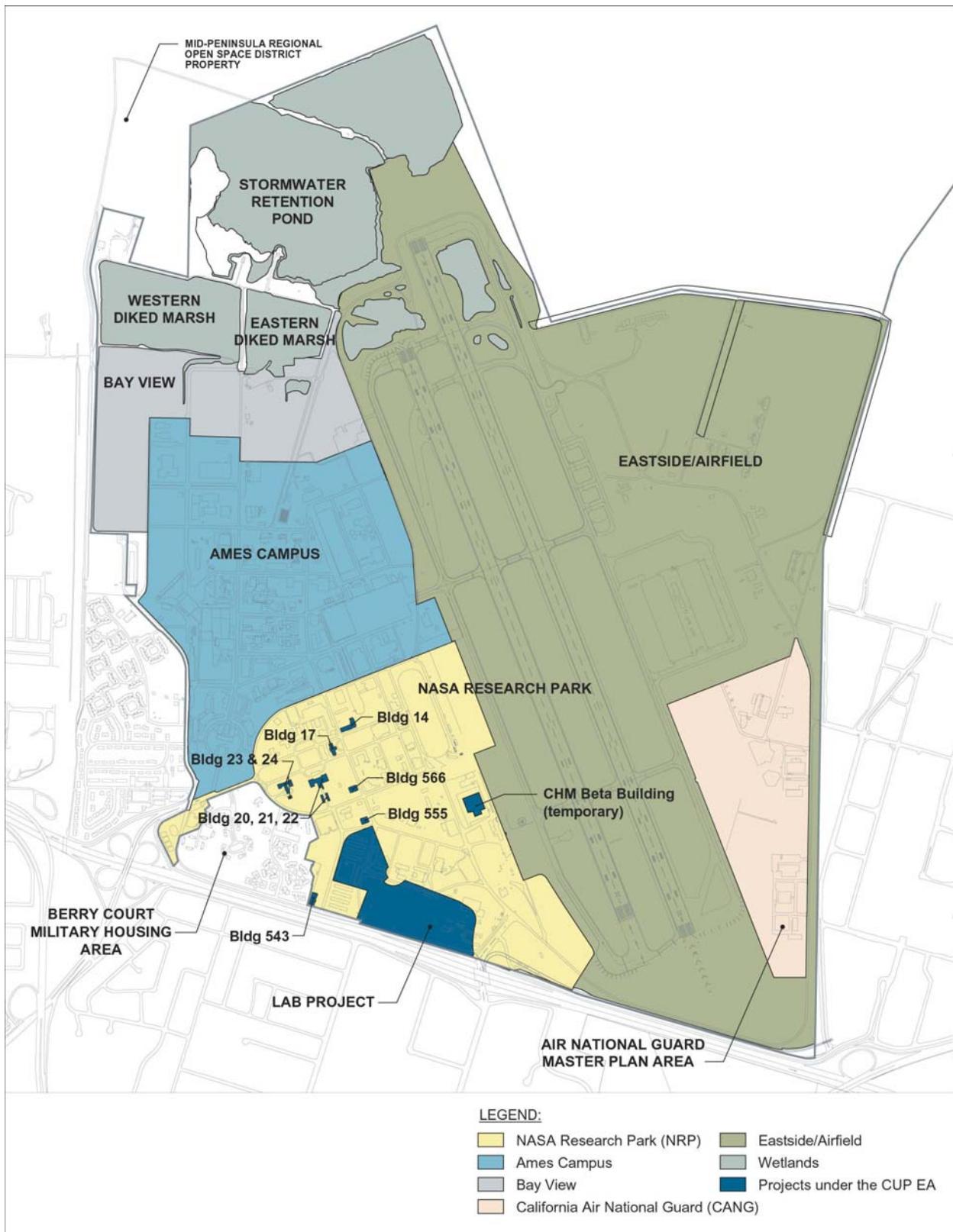
1.6.1 Different environmental entitlement approvals for each area of development within the Ames Research Center (e.g., the projects authorized by the CUP EA and the NADP) require the development of separate TDM plans. It is NASA's intent, however, that a consistent and comprehensive TDM Program ("Comprehensive Program") will be developed for the site.

1.6.2 Once the Comprehensive Program is established (i.e. Phase 1), it is anticipated that the NASA Research Park Tenants Association ("TA") will act as the Transportation Management Association ("TMA") for the land uses subject to this NRP TDM Plan.

1.7 Summary of Organization of NRP TDM Plan

Section 2 presents the goals and objectives of the plan. Section 3 explains the plan's implementation, evaluation and compliance strategies. Section 4 presents descriptions of the NRP TDM Plan elements and Section 5 describes the parking management program.

Figure 1-1: Site Map



2. GOALS AND OBJECTIVES

2.1 Sustainable Development

2.1.1 As it proceeds to implement the NADP EIS, NASA seeks to adhere to the maximum extent feasible to “sustainable” planning and design concepts. The concept of sustainability means complete physical, economical and social systems that produce no polluting waste products, can continue operating indefinitely and do not prevent other people and systems from enjoying the same.

2.1.2 Applied to transportation, this goal translates into the following project objectives:

- 2.1.2.1 Promote access to the site via transportation modes that reduce the consumption of gasoline;
- 2.1.2.2 Limit the amount of land that will be paved;
- 2.1.2.3 Reduce vehicle trips to reduce air pollutants, including greenhouse gases;
- 2.1.2.4 Reveal the “hidden” costs of parking to consumers and other decision-makers; and
- 2.1.2.5 Reduce peak-hour vehicle trips, since these add more demand on the transportation system than do trips made at other times of the day.

2.2 Campus Urban Design Vision

The TDM Plan supports a land use strategy to create a consistent, pedestrian-friendly, campus-like environment throughout the land parcels covered under the NADP. Initial traffic modeling at the NRP and Bay View assumed traditional trip generation rates for the type of development that would occur at the site. This modeling produced traffic volumes requiring four-lane roadways throughout the NRP. Such wide, busy streets are inconsistent with the NRP design envisioned by the NRP partners.

Additional traffic modeling showed that in order for the NRP’s roadway infrastructure to meet the urban design vision, vehicle trip generation would have to be reduced to achieve the narrower roadway widths desired by the NRP partners and NASA. The TDM plan is intended to achieve this reduction in vehicle trips, as well as increase vehicle occupancy and diversify modes of transportation.

2.3 Minimize Traffic and Air Quality Impacts

2.3.1 Projects under the NADP EIS will be designed and developed to minimize traffic and air quality impacts and to:

- 2.3.1.1 Promote orderly and controlled growth at Ames Research Center;
- 2.3.1.2 Provide workable relationships between land uses and the transportation system;
- 2.3.1.3 Conserve energy and land resources; and

2.3.1.4 Keep pollution at or below regulated levels¹

2.3.2 This NRP TDM Plan reflects NASA's commitment to aggressive strategies, including parking management, parking pricing and urban design strategies that create a pedestrian-friendly environment.

2.4 Increase Transportation Choices

Increasing transportation choices increases the attractiveness to tenants and future employees. Providing shuttle connections, encouraging increased transit, offering carpool, and transit subsidies, and providing a comprehensive bicycle network are programs that increase employee convenience, thereby increasing the attractiveness of the site as a place to do business.

The NADP also calls for the development of 810 dormitory units in the NRP area and 1,120 townhome and apartment units in Bayview. At least one resident of each Bayview unit must work or go to school at NASA Ames and 100% of dormitory unit residents must work or go to school at NASA Ames. Opportunities to live near the NRP will increase the ability of many people to accept employment or attend school at the NRP, thereby improving recruitment and retention for employers located in the NRP.

2.5 Trip Reduction Objectives

2.5.1 The NRP TDM Plan is designed to achieve an Average Vehicle Ridership of 1.72, or 58 cars per 100 commuting² employees/students coming to the site. This represents a 32% reduction beyond the baseline of 85.6 cars per 100 employees (an AVR of 1.17)³. Trips generated by the on-site housing that are traveling to destinations outside the NRP will not be counted in the annual AVR goal assessment. (See Section 3.5.1 for Cordon Count Guidelines and 3.5.2 for Cordon Count Conceptual Plan.)

2.5.2 The majority of trips will be generated by employees and students, while the rest will be generated by visitors and delivery vehicles. The NRP TDM program is designed to make it more feasible for employees, students and visitors to access the site using alternatives to the single occupant vehicle. The majority of the trip reduction impact, however, must come from employee and student trips.

2.5.3 A mode split objective needed to produce 58 cars per 100 daytime⁴ students and employees is shown in Figure 2-1. It is possible to achieve an AVR of 1.72 with different combinations of commute mode. The mode split shown in Figure 2-1 is one example.

¹ The development that will occur under the Ames Research Center NADP EIS can produce no more than 100 tons of NO_x emissions per year. See Appendix A for information on how these limits relate to trip generation.

² Commuting means employees and students who travel to the site on a regular basis of once a week or more. Includes those traveling from NRP and BayView housing to work or school within NRP.

³ Baseline measurement represents the number of cars per 100 employees at the worksites of Santa Clara resident employees where there are no TDM programs. Source: RIDES for Bay Area Commuters, *Commute Profile 2000*.

⁴ Daytime means the hours in which the cordon count (as described in Section 3.5.1) will be conducted. This will be a time period that includes, but is broader than, the peak hour (7 AM to 8 AM) so that student trips can be captured in the count.

Figure 2-1: Sample Mode Split Objective for Uses Under the NRP TDM Plan

Commute Mode	Mode Split
Drive Alone	52%
Carpool / Vanpool	12%
Bicycling ⁵ ⁶	12%
Transit ⁷	15%
Walk ⁸	10%
TOTAL	100%
Vehicle Trips/100	57
Average Vehicle Ridership	1.75

3. IMPLEMENTATION PLAN

3.1 Project Phasing

3.1.1 The NRP TDM Plan includes four phases. The phasing is designed to ensure that the programs are implemented in a manner that is supported by the level of development on site. The NRP TDM Plan's phasing requirements are based upon the total number of employees working at proposed NADP sites *plus* CUP EA sites. The NRP TDM program will take effect when the first project under the NADP EIS is occupied.

- 3.1.1.1 Phase 1: 0 to **2,675** employees/daytime students;
- 3.1.1.2 Phase 2: **2,675** to 5,999 employees/daytime students;
- 3.1.1.3 Phase 3: 6,000 to 7,999 employees/daytime students;
- 3.1.1.4 Phase 4: 8,000 to project build-out (about **12,226⁹** employees/daytime students)¹⁰ (9,626 employees/daytime students associated with NADP EIS; 2,600 associated with CUP EA)

⁵ Assumes that affiliates of NRP land uses have equal opportunity to live in any on-site housing that may be developed in the future under the proposed NADP.

⁶ Bicycling mode share comes from employees and students living off-site as well as in the proposed on-site housing. It is estimated that 1,400 students and employees affiliated with onsite partners will live in the proposed Bay View housing and that 1,560 students and employees affiliated with onsite partners will live in the NRP housing. It is estimated that about 79% of these people will be affiliated with NADP EIS land uses and that 100% of these people will ride the shuttle, walk, carpool, bicycle to the NRP or be dropped off at on-site work or school locations.

⁷ Transit mode share comes from employees and students living off-site as well as in Bay View.

⁸ Walk mode share comes from employees and students primarily living in housing located in Buildings 19, 20 and Parcel 6. (1,560 total; ~1,250 affiliated with EIS)

⁹ This employee/student count represents the estimated number of employees and daytime students under the CUP EA and NADP. This includes roughly 2,100 Lab Project employees, 500 "other CUP EA" employees, 6,626 NADP EIS employees, 3,000 daytime students.

¹⁰ Phases 2 through 4 are triggered only if development under the proposed NADP is approved.

3.2 Trip Reduction Phasing

The trip reduction objective of 58 cars/100 employees (1.72 Average Vehicle Ridership) (“AVR”) will be phased in over the course of the development as follows:

- 3.2.1 Phase 1: AVR goal of 1.33 (75 cars/100 employees/ students)
- 3.2.2 Phase 2: AVR goal of 1.45 (69 cars/100 employees/ students)
- 3.2.3 Phase 3: AVR goal of 1.60 (62.5 cars/100 employees/students)
- 3.2.4 Phase 4: AVR goal of 1.72 (58 cars/100 employees/students)¹¹

Phasing of the AVR goal is necessary because the critical mass of on-site employees will not initially exist to support the high-frequency shuttle services and carpool/vanpool capacity needed to achieve such aggressive AVR goals. In addition on-site housing will not be built until University-partner development phases begin, on-site retail, child care and fitness facilities will not reach their full potential until at least Phase 2, and at the start of development, abundant parking on open surface lots will be available to employees and visitor, thus requiring a phase in of the controlled-parking supply and parking pricing. Finally, parking prices will increase over time based on project and parking development.

3.3 Transportation Management Agency

- 3.3.1 Definition: A Transportation Management Agency (“TMA”) is an organization dedicated to the improvement of transportation access to a specific geographic area. NASA expects that the TMA will bear ultimate responsibility for running the site-wide TDM programs described in Section 4.3, managing the parking supply, and providing support to employers for any employer-specific programs that will be developed by Lessees.
- 3.3.2 Requirements:
 - 3.3.2.1 Each partner/lessee/tenant is required to fund the TMA based upon the funding strategy described in Section 3.3.4.
 - 3.3.2.2 Each partner/lessee/tenant is required to designate an employee to serve as a point of contact for the TMA.
 - 3.3.2.3 Each partner/lessee/tenant shall serve on the board of directors of the TMA. Depending on the number of tenants, appointment to the TMA Board could rotate over time.
 - 3.3.2.4 Each partner/lessee/tenant shall cooperate with the TMA to share information about their employees that will be useful to TDM programming. (e.g. GIS plotting information)

¹¹ Phases 2 through 4 are triggered only if development under the proposed NADP is approved.

3.3.3 TMA Formation: Initial TMA formation may occur prior to site occupation by uses under the NADP EIS. If the TMA has not yet been formed by the time this TDM Plan becomes effective, the TMA will be created by the partners through the Tenant's Association to manage all site-wide TDM programs.

3.3.4 TDM Program Funding

3.3.4.1 In Phase 1, the TMA and the site-wide TDM programs will be funded by revenues generated by TMA fees that are assessed on each Lessee/Partner/Tenant. Lessees/Partners/Tenants will independently continue to fund those aspects of the TDM program identified in Section 4.4.

3.3.4.2 Upon commencement of parking fees, (Phase 2), the TMA and the site-wide TDM programs will be funded by revenues generated from parking fees.¹² Lessees/Partners/Tenants will independently continue to fund those aspects of the TDM program identified in Section 4.4. Figure 3-1 estimates in 2002 dollars the TMA costs and revenues for each phase at recommended levels of service.

3.3.4.3 The fees in Figure 3-1 are based on the estimated costs of the TDM program elements described in Section 4. A budget showing the costs of the TDM program elements by project phase is shown in Figure 4-7. While these estimates are based upon the technical expertise and experience of the plan preparer, the estimates provided herein are for planning purposes only and neither Nelson-Nygaard Consulting Associates nor NASA warrant or guarantee these estimates. Actual costs may vary.

3.3.4.4 The TMA board or the tenant's association will be responsible for determining the best way to assess fees prior to revenue generation from parking fees (i.e. during Phase 1 and Phase 2, prior to establishment of parking charges). A per-employee fee methodology is presented in Figure 3-1. Other options could include a per-square-foot fee or per vehicle trip fee. Additionally, the structure could be set to include per-visitor or housing unit surcharges to meet the needs of the development partners as agreed to by the future TMA board or tenant's association.

¹² As per Chapter 5 of this TDM Plan, parking fees would be required to be set to cover the costs to provide parking and the cost of the TDM programs.

Figure 3-1: Potential TMA Annual Dues
for Recommended Levels of Programs

	Phase 1	Phase 2 (post implementation of parking fees)	Phase 3	Phase 4
Estimated Site-wide TDM Program Costs	\$915,000	\$2,530,000	\$3,840,000	\$4,020,000
Parking Fees Revenue Available to Support TMA programs	N/A	\$2,800,000	\$4,200,000	\$4,500,000
Amount to be funded through TMA dues	\$915,000	\$0	\$0	\$0
# of employees & daytime students at end of phase ¹³	2,675	2,676 to 5,999	6,000 to 7,999	8,000 to 12,226
Per Ee/Student Fee estimate	\$342/ee & daytime student	\$0/ee & daytime student ¹⁴	\$0/ee & daytime student	\$0/ee & daytime student

Appendix C provides information about revenues generated from parking fees.

Because the plan requires partners/lessees/tenants to charge for parking based on the cost to provide the parking, commercial and non-commercial partners save the cost they would normally spend to provide the parking supply for their employees. (For commercial partners, this also includes land costs.) The TDM program offers a savings over what partners would traditionally pay to provide access to their employees, students and visitors through a 100% subsidized parking supply. Further savings are realized, because partners are required to construct less parking than traditional parking ratios would require.

¹³ Includes all daytime students and all employees covered by the NRP TDM plan and CUP EA TDM plan.

¹⁴ Prior to the implementation of parking fees in Phase 2, the annual per employee/student cost could increase to ~\$750 (i.e. 2,676 employees with a program cost of \$2 million). (Program costs would not reach the high end of \$2.5 million until more employees were on-site.)

3.3.5 Benefits of the TMA

3.3.5.1 The TMA structure provides central management of critical TDM programs, thereby generating economies of scale and relieving individual Lessees from the operational and financial responsibility of providing these programs.

3.3.5.2 The broader the market for TDM programs, the greater their effectiveness. The site-wide TDM program managed by the TMA is designed to provide TDM benefits to a broad market while still recognizing the unique aspects of each Lessee's employment base.

3.3.5.3 The TMA provides continuity across the NRP regarding transportation policies and programs

3.3.5.4 The TMA structure sets up the framework to either:

3.3.5.4.1 manage the shared parking supply; or

3.3.5.4.2 oversee a contract for third-party management of the shared parking supply

3.3.5.5 Through its oversight and management of the shared parking supply, the TMA structure creates uniform parking policies and procedures to support the shared system.

3.4 Program Responsibility

Section 3.4.1 lists the TDM programs that will be managed by the TMA on a site-wide basis and financed through TMA dues. Section 3.4.2 and 3.4.3 list the programs that will be the responsibility of individual tenants/partners. Section 3.4.4 itemizes optional TDM strategies that the partners/lessees/tenants may choose to implement. Section 4.0 provides details about each of the TDM program elements.

3.4.1 TMA Site-Wide TDM Programs (Phase 1 – 4)

3.4.1.1 Shuttle Program

3.4.1.2 Preferential HOV parking

3.4.1.3 Carpool promotion

3.4.1.4 Bicycle racks

3.4.1.5 Bicycle promotional programs

3.4.1.6 Car-share program

3.4.1.7 On-site bicycle fleet

3.4.1.8 Site-wide Transit Pass/Subsidy program

3.4.1.9 Guaranteed Ride Home Program

3.4.1.10 Marketing and Information

3.4.1.11 Community outreach

3.4.1.12 Parking management

The items described in Section 3.4.1 are further explained below and used to estimate TDM program costs. This list, however, is not intended to be all inclusive. The TMA may find that additional programs could have a more effective trip reduction impact. If the TMA finds that a program is simply not effective¹⁵, the TMA, through board action, may replace the program with another option.

3.4.2 Partner/Lessee Site-Wide TDM Programs Required as Part of Site Development

The programs listed in 3.4.2 are site-wide programs, but the responsibility for implementation rests with the partners/lessees/tenants. Some will be developed collaboratively among the partners for site-wide benefit, while others require collaboration between the partners to achieve collective benefit for all members of the NRP (e.g. on-site housing). In addition, some will be implemented by specific partners for the benefit of the site (e.g. on-site retail, on-site fitness center).

3.4.2.1 Pedestrian path network (see the NRP Design Guidelines for additional requirements)

3.4.2.2 Bicycle path network (see the NRP Design Guidelines for additional requirements)

3.4.2.3 On-site housing (see the NRP Design Guidelines for additional requirements)

3.4.2.4 On-site fitness center

3.4.2.5 Site signage (see the NRP Design Guidelines for additional requirements)

3.4.2.6 On-site retail, open space and other site amenities

3.4.3 Partner/Lessee Required Programs (Phase 1 – 4)

3.4.3.1 Class I, Long-term bicycle parking

3.4.3.2 Class II, Short-term bicycle parking

3.4.3.3 Showers and clothing lockers

3.4.3.4 Marketing and information to new employees

3.4.3.5 TDM program designee

¹⁵ Effective means effective in terms of reducing vehicle trips. If a program is found to have excessive administrative difficulties or create excessive liability exposure, these programs can be replaced with other options at the direction of the TMA board.

- 3.4.4 Partner/Lessee – Specific Programs (Optional)
 - 3.4.4.1 Employer-specific shuttles
 - 3.4.4.2 Local shuttles
 - 3.4.4.3 Parking cash-out, transportation allowance, or other subsidy programs
 - 3.4.4.4 Alternative work hours
 - 3.4.4.5 Telecommuting
 - 3.4.4.6 Subscription buses
 - 3.4.4.7 Long-term non-commute bicycle parking
 - 3.4.4.8 Electric carts/bikes as part of service fleet

3.5 Program Evaluation

AVR will be measured annually.

3.5.1 Annual Cordon Count Guidelines

It is recommended that a cordon count be conducted to evaluate annual site-wide AVR. A Cordon Count is recommended because of the economies of scale given the number of partners, lessees and tenants that will occupy the site. In addition, a cordon count is less labor intensive than an annual survey (given the number of partners, lessees and tenants on site and the number of people who will not have regular schedules or regular office locations). The cordon count is more accurate since it is not subject to response rate biases and will measure the joint AVR of the partners, lessees and tenants, and will not place measurement burden on each entity. Finally, the cordon count is designed to work in conjunction with the penalty mechanism, such that more car-intensive entities pay proportionally more (through parking fees) than less car-intensive entities.

The TMA board may, however, decide that individual partner/lessee/tenant AVR counts are more appropriate. Such individual counts would facilitate the use of “AVR credits,” whereby a partner with a higher AVR could sell or trade AVR credits to a partner with a lower AVR. The TMA board can decide if these individual AVR counts should be done through cordon counts or surveys. If a survey method is selected, each partner/lessee/tenant must achieve a 60% survey response rate among its total daytime (6 AM to 7 PM) population.

The following describes the Cordon Count guidelines.

- 3.5.1.1 The annual cordon count will assess the number of bicyclists, walkers, carpoolers; vanpoolers and solo drivers entering the proposed NRP;
- 3.5.1.2 The TMA will be responsible for conducting the annual count;
- 3.5.1.3 The count will be conducted to capture a period greater than the peak period, so that student trips are included. The TMA can determine the appropriate hours for the count to meet the needs of this plan;

- 3.5.1.4 The count will be conducted annually and around the same time each year;
- 3.5.1.5 The count will be conducted in a month in which any of NASA's university partners is in full session;
- 3.5.1.6 The count will be conducted at a time that does not conflict with any major holidays; and
- 3.5.1.7 It is recommended that the count be conducted at a time that is typically not part of the rainy season in order to capture bicyclists and walkers.
- 3.5.1.8 The following outlines a concept plan for how the count could be administered. Based on actual build-out of development under the NADP, the partners may choose to develop a different strategy. The point of this concept plan is to provide guidance to staff members who will coordinate the count.

3.5.2 Cordon Count Conceptual Plan

3.5.2.1 Single Occupant Vehicles, Carpools and Vanpools: Garage technology will be able to provide the daily count of vehicles and the number of occupants per vehicle entering and exiting controlled lots.

3.5.2.2 Bicyclists and Pedestrians: Bicyclists and pedestrians would be counted at the following intersections:

- a. Bailey Road & McCord Avenue Extension (residential district entry)
- b. Westcoat Road & Clark Road
- c. Ellis Street Entry
- d. Bicyclists and pedestrians counted exiting the NRP at the last two count locations would be subtracted from the count of entering bikes and pedestrians, since these people would be campus residents cycling off-campus (e.g. spouses living in NRP housing) or people traveling to jobs at the Ames Campus located outside the NRP.
- e. Another bike/ped count location would be set up at the light rail station to count people who are walking or biking to the NRP after taking light rail. (These people would be counted as light rail riders. It is anticipated that this count can be done in a location such that people who are walking from the transit center parking garage will not be counted.)
- f. To ensure full capture of those traveling from housing located within the NRP to jobs or school within the NRP, additional count sites may be needed within the interior of the NRP depending on the precise location of future housing. It may be more practical to capture the walk and bike trips made by these residents through an estimation of the on-site population.

3.5.2.3 Transit

- 3.5.2.3.1 Caltrain, Altamont Commuter Express (ACE), some Valley Transportation Authority (VTA) bus riders and light rail riders who transfer to the shuttles will be counted through the on-board shuttle survey and ridecheck described in Section 3.5.3.
- 3.5.2.3.2 If VTA buses make drop-offs on-site, these transit riders will be counted at the VTA bus stops on the NRP
- 3.5.2.3.3 Light-rail riders who walk or bike from the transit center to the NRP will be counted at the pedestrian/bicycle check point at the transit center. (If they are walking through the NRP to the Ames Campus, they will be subtracted at the Westcoat & Clark intersection.)

3.5.3 Annual On-Board Shuttle Survey and Ridecheck

- 3.5.3.1 An annual on-board shuttle survey will be administered on the same day as the annual cordon count. In addition to gathering information from passengers about the shuttle system, the on-board survey will confirm:
 - 3.5.3.1.1 How passengers got to the shuttle system to determine if they are light rail, Caltrain, VTA, ACE riders or parkers at the transit center garage; and
 - 3.5.3.1.2 Where passengers are going to: various NRP locations, Bay View, or Ames Campus.
- 3.5.3.2 All passengers will be counted. The NRP passengers who come from Caltrain, VTA, ACE or the light rail will be tallied for purposes of the Average Vehicle Ridership calculation. NRP shuttle passengers who are coming from the transit center parking garage will not be counted. These people will be counted through the vehicle counts described above.

3.5.4 Average Vehicle Ridership (AVR) Calculation

- 3.5.4.1 NRP AVR will be calculated using the following formula:

Transit riders + walkers + bikers + total vehicle passengers¹⁶ entering NRP / Total vehicles¹⁷ entering NRP

- 3.5.4.2 Telecommuting and Compressed Work Weeks
A Cordon Count will not capture the effects of telecommuting and compressed work weeks. To include the benefits of these programs in the Annual Cordon Count, the TMA will request information from partners/lessees/tenants about their telecommuting and compressed

¹⁶ not including passengers in commercial vehicles

¹⁷ not including transit vehicles, shuttle vehicles & commercial vehicles

work week programs. Partners must be able to provide the following information in order for the trip reduction benefits of these programs to be counted in the AVR calculation:

- # of employees telecommuting on a weekly basis (e.g. at least once a week)
- average number of days per week employees telecommute
- # of employees working a 9/80 schedule
- # of employees working a 4/10 schedule

(Teaching and class schedules at Universities do not always require students and faculty to come to site every day of the week. While such schedules do not *require* this travel behavior, there is no guarantee that those not scheduled for classes will not come to the site. Separate monitoring of such schedules will not be included in the Telecommuting/Compressed Work Week count.)

The amount of trip reduction attributable to telecommuting and compressed work week programs will be applied consistent to the mode split measured by the cordon count. If the mode split from the cordon count finds that 50% of trips to the NRP are in Single Occupant Vehicles, then 50% of the telecommuters and those working compressed work weeks would be credited for reducing vehicle trips by telecommuting, etc. A sample calculation is shown below.

	# of employees	Avg. # of days/week	Avg. Daily Trip Reduction	% of SOV (50%)
telecommuting	500	1	100 trips	50 trips
9/80	500	.5	50 trips	25 trips
4/10	100	1	20 trips	10 trips

$$\text{AVR from Cordon Count} = \frac{\text{20,000 person trips}}{11,500 \text{ vehicle trips}} = 1.74$$

$$\text{AVR with CWW & TC} = \frac{\text{20,085 person trips}}{11,500 \text{ vehicle trips}} = 1.75$$

3.6 **Compliance**

3.6.1 Compliance: Phase 1 through Implementation of Parking Fees

- 3.6.1.1 It is anticipated that parking fees will not be implemented until some point during Phase 2 (see Section 5.4). If the AVR target is not met before parking charges have been established, the partners/lessees/tenants shall pay a supplemental TDM charge. This charge shall be assessed annually, each year the applicable AVR goal is not achieved. If population levels move the site into a new phase (thereby raising the AVR target) within the six months prior to the cordon count, an average of the new and old target will be used to determine whether supplemental charges are required. The supplemental charge will be billed to the partners/tenants/lessees as a

surcharge to the annual TMA dues bill (TMA dues are discussed in Section 3.3.44).

- 3.6.1.2 The surcharge will mirror the percentage by which the measured AVR falls below the AVR target. For example, in Phase I, the AVR target is 1.33. If a 1.27 AVR is achieved, this is 4.5% below the target and each Lessee/Tenant Partner will be charged an additional 4.5% of their annual TMA fee. For a tenant whose annual TMA dues are \$50,000, this represents an additional \$2,500 fee.

3.6.2 Compliance: Post Parking Fee Implementation

3.6.2.1 If the AVR calculation shows that the AVR target is not met, the TMA will raise parking rates by the same percentage by which the AVR target was missed. For example:

AVR Target	=	1.72
AVR Measured	=	1.68
% by which target was missed	=	(1.72 – 1.68)/1.72 = 2.3%
Existing Parking Rate	=	\$175/month
New Rate	=	\$180/month

3.6.2.2 Under this plan, it does not matter which partners/lessees have a high AVR or a low AVR. The collective NRP AVR is measured; not the AVRs of each partner/lessee. This allows more car-intensive and less-car-intensive uses to mutually benefit each other. At the same time, those partners/lessees who have the highest proportion of parkers will be most impacted by the failure to achieve target AVR, since the penalty is assessed through parking fees. In this way, those who are most responsible for not meeting the AVR target are assessed the most.

3.6.3 Use of Compliance Fees

3.6.3.1 The additional revenue will be used to provide more TDM programs. These additional TDM programs could include:

- 3.6.3.1.1 Transit voucher subsidies to employees who ride ACE, BART or other transit systems not covered by the EcoPass program (employees must ride these systems as part of their commute to NRP three days per week or more.)
- 3.6.3.1.2 Vanpool voucher subsidies to employees who vanpool to work three days per week or more
- 3.6.3.1.3 Taxable cash subsidies to employees who bike or walk to work three days per week or more
- 3.6.3.1.4 Taxable cash subsidies to carpools carpooling to work three days per week or more (including drop-offs). Subsidy amount should increase with the size of the carpool.

4. TDM PROGRAM ELEMENTS

4.1 Existing Conditions

4.1.1 Carpooling

4.1.1.1 Existing carpool lanes provide significant travel-time savings for vehicles with two or more people traveling to the Ames Research Center. Continuous carpool lanes are available on the following highways:

- 4.1.1.1.1 US 101 between Redwood City and south San José
- 4.1.1.1.2 Highway 85 connecting U.S. 101 in Mountain View with U.S. 101 in south San Jose
- 4.1.1.1.3 Highway 237 from Mathilda to I-880
- 4.1.1.1.4 Lawrence Expressway
- 4.1.1.1.5 Interstate 280 from Highway 87 to Highway 85

4.1.1.2 Planned projects by other federal, state and local agencies would increase the carpool lane network throughout most of Santa Clara County.

4.1.2 Transit

4.1.2.1 Light Rail

The NASA Ames Research Center has a light rail stop on site. The stop is about 0.25 to 1 mile from Lessee/Tenant/Partner's Premises. The light rail runs from 5 AM to about 3 AM and provides service every 10 minutes between 5 AM and 7 PM. Service is less frequent between 7 PM and 3 AM. The NASA stop is on the Mountain View – I-880/Milpitas line which runs between downtown Mountain View and Milpitas . Riders can make connections to the Baypointe – Santa Teresa Line at the Baypointe station. A third light rail line connects to the Baypointe – Santa Teresa Line at the Ohlone/Chynoweth station.

4.1.2.2 Caltrain

The nearest Caltrain Station is located in downtown Mountain View, about 3 miles from the Ames Research Center. Caltrain can be accessed from the NRP either on the light rail or by shuttle. Caltrain operates commuter rail service between San Francisco and San Jose, as well as limited service extending to Gilroy. On weekdays, Caltrain runs from about 4:30 AM to about 1:30 AM with 15 to 30 minutes between trains during the AM and PM peaks and 60 minutes between trains midday and after 7:00 PM. Service is less frequent on Saturdays, Sundays, and holidays.

4.1.2.3 Valley Transportation Authority

Figure 4-1 shows the VTA bus lines that serve the NRP and downtown Mountain View. Line 51 is the only route that provides direct service to the NASA Ames Research Center. The other routes serve downtown Mountain View.

Figure 4-1: VTA Bus Routes Serving the NRP and/or Downtown Mountain View

Route	Service Area
51	Vallco Parkway in Cupertino to NASA Ames Research Center
34	Mountain View to Santa Clara Caltrain
35	Stanford Shopping Center (Palo Alto) to Mountain View Caltrain
47	Mountain View Caltrain to San Antonio Shopping Center (Mountain View)
48	Mountain View Caltrain to Middlefield & Ellis
52	Mountain View Caltrain to Foothill College (Los Altos Hills)
22	Palo Alto to San Jose (serves downtown Mountain View) VTA's most-traveled, most-frequent route.
304	Peak Hour Express Service: Mountain View Caltrain to Santa Teresa (San Jose)
305	Peak Hour Express Service: Mountain View Caltrain to South San Jose
345	Peak Hour Express Service: Mountain View Caltrain to Eastridge (San Jose)

4.1.2.4 Shuttles

NASA currently operates a shuttle between the Ames Research Center and the Mountain View Caltrain station. Shuttles currently run between 6:10 and 9:25 in the morning, and between 2:48 and 5:48 in the afternoon.

4.1.2.5 Altamont Commuter Express (ACE)

The closest ACE rail station is the Great America station located on Lafayette Street at Tasman Drive. Patrons can transfer directly to the LRT at the Lick Mill station.

4.1.3 Bicycling

Within the Ames Research Center, marked bicycle lanes exist on Wright Avenue between the Moffett Extension and Hunsaker Road. In addition, a separate bicycle path was recently constructed adjacent to Macon Road between Ellis Street and the Lockheed Gate on 5th Avenue. Throughout the remainder of the Ames Research Center, the low traffic volumes and the availability of sidewalks or shoulders provide a reasonable environment for cyclists.

4.1.3.1 Bicycle facilities external to the Ames Research Center include the Stevens Creek Trail, which runs from Landels School in Mountain View to the Bay Trail. The Stevens Creek Trail intersects Moffett Boulevard providing access to the Ames Research Center. Cyclists and pedestrians can also access the Ames Research Center via a bridge over the creek and a gate located north of the military housing area. The Stevens Creek trail will ultimately be extended south to Cupertino and Los Altos.

4.1.3.2 Moffett Boulevard is a designated bike route between the main gate of the Ames Research Center and downtown Mountain View. Bike lanes have been marked on Moffett Boulevard beginning on the west side on the Highway 101 interchange. Bicycle travel through the Moffett Boulevard interchange is considered difficult because bicyclists must cross weaving vehicle traffic using the loop and high-speed direct ramps.

4.1.3.3 Bike lanes are also marked on Ellis Street on the west side of the Highway 101 interchange. Bicycle travel through the Ellis Street interchange is also considered difficult because cyclists share the relatively narrow travel lanes with vehicles under the Highway 101 overpass. Designated bike lanes are provided on Manila Drive east of Ellis Street.

4.1.3.4 Combined, the available facilities provide a reasonable level of bicycle access to the Ames Research Center. While gaps in exclusive bicycle facilities across Highway 101 and Highway 237 limit the attractiveness to cyclists, the City of Sunnyvale plans to construct a new bike bridge in 2002, and the NADP includes a mitigation measure to improve bicycle access through the Ellis Street interchange.

4.2 **TMA Managed Site-Wide TDM Programs (Phase 1 – 4)**

4.2.1 Shuttle Programs

4.2.1.1 The TMA will develop and manage a comprehensive NRP shuttle system. The TMA will coordinate the involved parties, provide administrative services to keep the shuttles on the road, and act as the interface between those served by the shuttle (riders and partners/tenants) and the shuttle contractor. It is anticipated that shuttle operations will be contracted to third-party shuttle service provider. If fueling capacity is available on-site or nearby, the shuttle service should operate CNG or bio-diesel vehicles.

4.2.1.2 The shuttle system will include several routes. The shuttle program is committed to meeting the needs of the entire research park, but the specific shuttle plan will remain flexible in order to adjust to the market and changes in the transportation infrastructure.

4.2.1.3 Shuttle Service Design Guidelines:

- 4.2.1.3.1 At a minimum, shuttle connections will be provided between the following:
- a. NRP and light rail
 - b. NRP campus and large parking facilities as needed
 - c. Bay View and NRP
 - d. NRP and Altamont Commuter Express (ACE) rail
 - e. Bay View, NRP and downtown Mountain View (Caltrain & El Camino)
 - f. Shuttles serving the NRP will operate bi-directionally to create a transit system that is easily understood by users
 - g. Shuttle services may be phased in over the course of the project phases and frequency of service will increase over time. From the outset, an NRP to Downtown Mountain View shuttle connection will be provided.
 - h. Shuttle frequencies will be increased over the course of the project phases as needed to achieve AVR goals. At a minimum, shuttles are recommended to begin on 20-minute headways.
 - i. The NRP/downtown shuttle is recommended to achieve ten-minute headways no later than the beginning of Phase 3.
 - j. Shuttles will meet at a central location on the NRP, such as McCord Avenue.
 - k. A shuttle connection to downtown Mountain View will be the most important link in the shuttle system. Connections to both Caltrain and VTA buses traveling along El Camino will be made by this shuttle.
 - l. Given the short distances between land uses within the NRP, emphasis will be placed on high frequency service.
 - m. Any stop located within 1,000 feet of a building is considered to serve that building.

4.2.1.3.2 Coverage and Frequency

Given the short distances between origins and destinations at the NRP (0.4 mile from the light rail station to the heart of the NRP parcels), it is recommended that shuttles provide frequent service in order to attract riders. Potential riders will not wait ten minutes for a trip that would take two minutes in a car or seven minutes to walk. Furthermore, it is recommended that stops located within 500 feet of any front door be considered “front door” service.

4.2.1.4 NASA and NRP Shuttles

4.2.1.4.1 Shuttle service to the NASA property located behind the NASA fence line will not be funded through the TMA. The TMA and

NASA, however, are encouraged to work together to provide services to both entities to:

- a. Realize the greatest economies of scale,
- b. Serve as many riders as possible without duplicating service,
- c. Provide more frequent service, and
- d. Equitably fund the services.

4.2.1.5 Sample Route Design

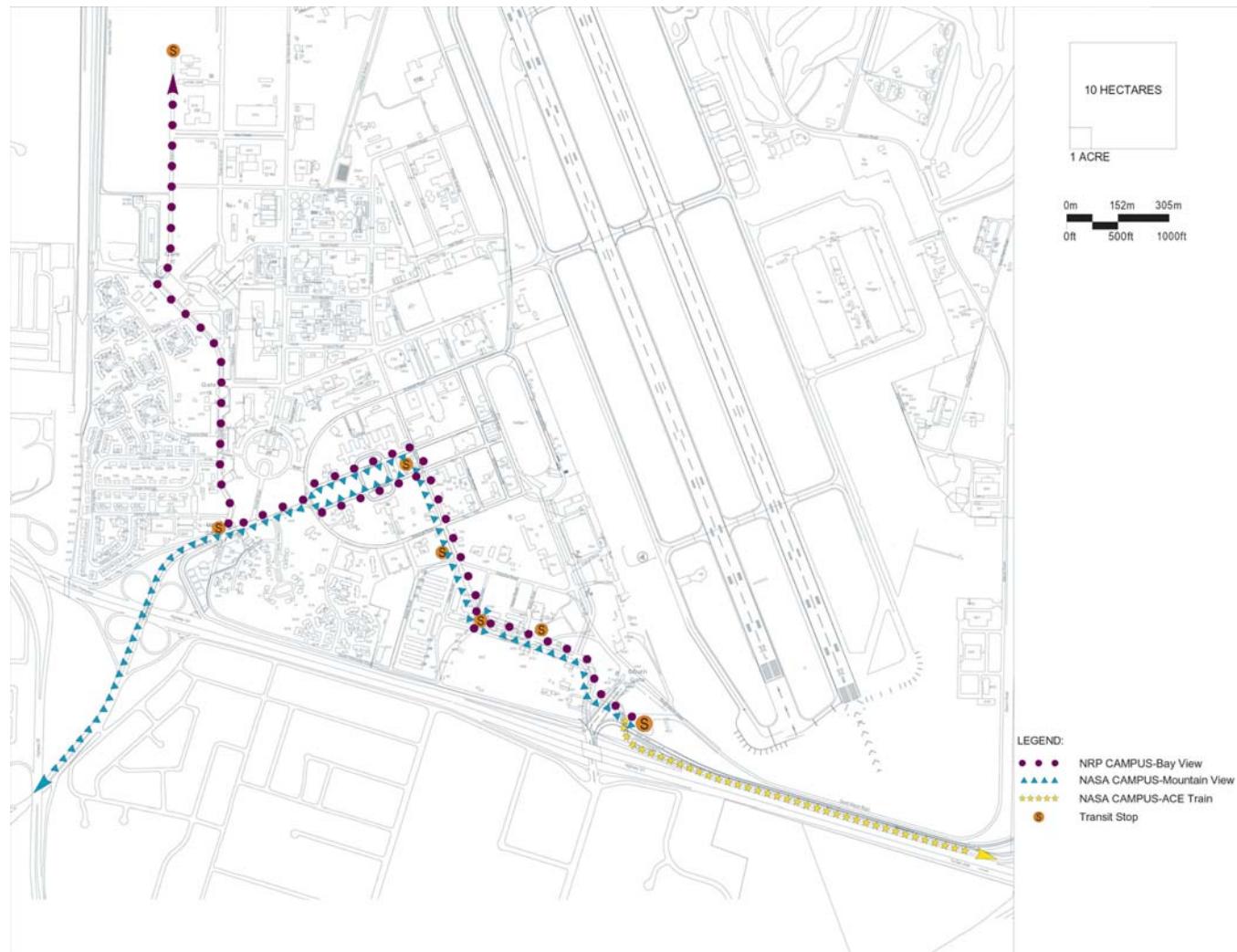
4.2.1.5.1 Conceptual schematics of the shuttle system are provided in Figure 4-2. Weekday service is concentrated on key corridors in order to provide high-frequency, cost-effective routing that provides stops within 1,000 feet of critical destinations. The route design makes the best use of the NRP's pedestrian-orientation and the short walking distances between land uses.

4.2.1.5.2 The design provides door-to-door service (stop within 500 feet) at the following locations:

- a. Light Rail Station
- b. Lab Project Parcel
- c. McCord Avenue Extension
- d. NRP Housing Parcel
- e. University Partner Parcels
- f. Conference & Training Center
- g. California Air & Space Center
- h. Computer Museum History Center
- i. Ames Campus
- j. Bay View Housing
- k. Caltrain
- l. Downtown Mountain View & El Camino Real
- m. ACE Train Station

4.2.1.5.3 Service would be rerouted on weekends to serve residents.

Figure 4-2: Conceptual Shuttle System – Weekday Service



4.2.2 Preferential Parking for Carpools and Vanpools

4.2.2.1 The majority of the parking supply within the NRP will be shared between the different land uses (See Section 5). Parking will be supplied according to the plan described in Section 5. Carpool parking will be provided within the total shared supply that is located within the NRP. Through its parking management function (see Section 5.0), the TMA will be responsible for registering carpoolers for preferential parking privileges and monitoring HOV parking spaces for abuse.

4.2.2.2 The parking access technology guidelines (described in Section 5.10) require that the parking technology be programmed to recognize multi-passenger vehicles, either by allowing 2 or more ID badges to be swiped when one car is at the access gate or with monitoring cameras. This will allow flexibility in the future to potentially offer reduced parking pricing for carpools as well as desirable parking spaces.

4.2.3 Carpooling

4.2.3.1 The following programs will further encourage carpooling:

- 4.2.3.1.1** Preferential Parking (see Sections 4.2.2, 4.3.2 and 5.5)
- 4.2.3.1.2** Car Share Vehicles available to regular carpoolers (see Section 4.2.6)
- 4.2.3.1.3** Ability to share parking fees
- 4.2.3.1.4** Guaranteed Ride Home Program (see Section 4.2.10)
- 4.2.3.1.5** Ride matching (see Section 4.2.11)
- 4.2.3.1.6** Annual carpool registration campaign (see Section 4.2.11)

4.2.4 Bicycle Parking¹⁸

4.2.4.1 As itemized in section 3.4, the TMA will be responsible for installing and maintaining Class II bicycle rack parking in common areas around the NRP (about 300 rack spaces). (The partners will be responsible for installing and maintaining Class I covered bike parking and Class II bike rack parking on their parcels.)

4.2.4.1.1 Guidelines for Bicycle Rack Design:

- a. Must support the bicycle frame
- b. Must allow cyclists to lock both the bicycle frame and wheel with a U-lock (This is the definition of Class II bike parking.)
- c. Must be easy to use

¹⁸ All bicycle guidelines in the CUP EA TDM Plan meet the requirements of VTA's bicycle technical guidelines. Additional information and detail about bike parking, network development and signage can be obtained from "Bicycle Technical Guidelines: A Guide for Local Agencies in Santa Clara County," published by the VTA.

- d. Locking mechanisms/instructions must be understandable to the first-time user
- e. Must ensure that surrounding space is used efficiently, so that cyclists can park close together yet have adequate room to maneuver their bicycles in and out of the spaces

4.2.4.1.2 Guidelines for Bicycle Rack Placement:

- a. Bike racks will be located within 50 feet of building entrances (per the Valley Transportation Authority's "Bicycle Technical Guidelines"). Not every building must have a bike rack.
- b. The exact rack placement shall be made to avoid pedestrian conflicts.
- c. Bike racks will be installed within easy viewing distance from a main pedestrian walkway.
- d. Sidewalks with bicycle parking should be at least 12 feet wide to accommodate bicycle parking.
- e. When placed against buildings or walls, bike racks need at least 2 feet of clear space between the rack and a parallel wall, and 2.5 feet of clear space between the rack and a perpendicular wall.
- f. Racks will be placed on hard surfaces (i.e. paved)
- g. Bike racks on sidewalks will be placed on the curb-side and in a manner to avoid pedestrian conflicts.
- h. Where bike racks on sidewalks are adjacent to a free-flowing traffic lane, the rack should be placed a minimum of 3 feet from the curb.
- i. Rack placement will be phased in over time as the NRP population grows. Bicycle racks to accommodate 3% of the NRP population will be located throughout the common areas (300 rack spaces at build-out).

4.2.4.2 TMA-Provided Bicycle Rack Locations

- 4.2.4.2.1** TMA-provided bicycle racks are expected to be located at the following locations:
- a. Transit Green parking garage
 - b. McCord Avenue shopping district – in front of key retail destinations
 - c. Park Circle

4.2.4.2.2 Additional short-term, as well as long-term, bicycle parking will be provided by partners and Lessees. (See Section 4.2.4) The TMA will be available to administer the distribution of bicycle parking cards and help manage the long-term bike parking program.

4.2.5 Bicycle Promotional Programs

4.2.5.1 The TMA will be instrumental in developing a bicycle culture at the NRP by providing support programs for cyclists, such as a “pedal club.”

4.2.5.2 Sponsor an annual event to promote cycling, like “Bike to Work” day or week.

4.2.5.3 Keep bicycle maintenance supplies in the TMA office such as extra tire tubes, a tire pump, wrenches, etc.

4.2.5.4 Provide on-site bicycle registration.

4.2.5.5 Provide a “spot improvement” program to allow bicyclists to inform the TMA of potholes or other maintenance problems along bike travelways. The TMA will forward these maintenance requests to the entity responsible for roadway maintenance at that location.

4.2.5.6 On an as-needed basis, the TMA will conduct a Level-of-Service (LOS) analysis of bicycle conditions. When bicycle LOS reaches levels of E or F, the TMA will recommend necessary improvements to the entity (or entities) responsible for bicycle access conditions at that location. While there are no “official” Institute of Transportation Engineers (ITE) bicycle LOS standards, some cities have developed their own bicycle LOS standards. A bicycle LOS standard that has been developed is the “Bicycle Compatibility Index.” This index uses the amount of vehicle traffic, vehicle speeds, the separation between bicycles and moving traffic, the presence of on-street parking and heavy vehicles, and the condition of the pavement surface to compile a mathematically derived LOS. This standard is available in Federal Highway publication FHWA-RD-98-072 (December 1998). The TMA could also develop its own bicycle LOS standards and/or consult with neighboring cities and the VTA.

4.2.6 On-Site Car-Share Program

4.2.6.1 The TMA will manage an on-site, non-profit car-share program. The car-share program is designed to provide cars to people who need them on an occasional basis. Since the cars will mainly be used on weekends (by site residents) and during weekday days (by site employees), the cars will also be made available to regular carpool commuters. User-groups are described in the following table. Fees will be structured so that the car-share program is self-financed and covers the cost of parking for the cars. Cars used for the guaranteed ride program, however, will be issued free of charge. The number of vehicles available through the car-share program will increase over time as more employees and residents are located at the NRP.

4.2.6.2 Figure 4-3 illustrates how a car share program might work. It is provided for illustrative and guidance purposes. The actual program should be designed by the TMA to best meet the needs of TMA members.

Figure 4-3: Conceptual Car Share Program

User Group	Purpose	Sample Rates
Commuters	Car-share vehicles will be available for full-time carpoolers (2 or more people; at least 4-days per week)	Available on a monthly basis only \$0.35 per mile (including gas)
On-site residents	Any travel need	\$2.50 per hour (capped at 10 hours/day) \$0.45 per mile (including gas)
Any NRP employee	Mid-day business travel needs	\$2.50 per hour \$0.45 per mile (including gas)
Registered NRP alternative commuters	Guaranteed Ride Home program	free

4.2.7 On-Site Bicycle Fleet

4.2.7.1 A fleet of on-site bicycles, including some electric bikes, will be provided to facilitate travel between the light rail station and the NRP, as well as throughout the NRP.

4.2.7.2 The bikes should be of high enough quality to make them an attractive alternative for getting around campus. Helmets must also be provided as required by NASA (currently mandatory). If theft is a concern, these “grab ‘n go” bicycles could be equipped with GPS trackers. Figure 4-4 explains how the program might work. This example is provided for illustrative and guidance purposes. The actual program will be designed by the TMA to best meet the needs of TMA members.

Figure 4-4: “Grab ‘n Go” Bike Program Sample Plan

Anyone wishing to use a grab ‘n go bike will register with the NRP TMA for the program and receive a personalized access device called a fob. The fob will work as a key-card to unlock the bicycle. Registered users can take the bikes anywhere on the NRP, Bayview or Ames Campus grounds.

Information recorded from the fob and bicycle will allow the NRP TMA to know who took the bicycle last and where it is parked at any time. Grab ‘n Go bikes will be high-quality bikes that will be uniquely identifiable by their paint.

4.2.8 Vanpool Program

4.2.8.1 The TMA vanpool program will include the following:

4.2.8.1.1 Vanpool formation meetings

4.2.8.1.2 Vanpool promotion

Vanpools will be required to pay for the cost of their parking. The success of vanpools will increase as the NRP's population grows.

4.2.9 Site-Wide Transit Pass/Subsidy Program

4.2.9.1 Lessee shall provide the VTA EcoPass program site-wide to provide free transit on VTA buses and Caltrain. A description of this program follows in Figure 4-5. Lessee has the authority to replace the EcoPass program with another transit subsidy program that can better meet the needs of the employees, students, tenants, lessees and partners. The EcoPass program is recommended, because it encourages regular, as well as occasional, transit use and offers the greatest convenience and flexibility to users. It is also the most cost-effective transit subsidy program available. If the board replaces EcoPass with another subsidy option, the following guidelines shall apply. The replacement program shall:

- 4.2.9.1.1 provide free or deeply discounted transit to regular transit users
- 4.2.9.1.2 provide free or deeply discounted transit to occasional transit users
- 4.2.9.1.3 provide free or deeply discounted transit for all trip purposes
- 4.2.9.1.4 continue to subsidize both local buses (VTA) and Caltrain
- 4.2.9.1.5 be available site-wide
- 4.2.9.1.6 encourage mode shift

4.2.9.2 Under the EcoPass system, Lessee shall coordinate payment to VTA and coordinate provision of annual EcoPasses to its employees.

Figure 4-5: How VTA EcoPass Works

The employer (in this case the NRP) pays a set per-head fee to the VTA to purchase annual passes for all their employees. The passes are good on VTA buses, Light Rail, the Dumbarton Express, Highway 17 Express buses and Caltrain. In order to receive the deep-discount, the NRP TMA must pay the per-head fee for every employee working at, and daytime student attending school at, the NRP, regardless of whether the employee/student will use transit or not. Employers then provide these passes free to any employee (student) working (attending school) at the NRP.

4.2.10 Guaranteed Ride Home Program

A Guaranteed Ride Home program provides free rides home to alternative transportation users who have emergencies on days when they are without their cars at work. Qualified emergencies include personal illness or illness of a family member, an issue at a child's school, or being required to work unexpected overtime. Employees who use their EcoPasses to ride VTA buses, light rail or Caltrain will be eligible to use

the VTA guaranteed ride home program. The NRP TMA will also offer a guaranteed ride home program for people who walk, bike, carpool, vanpool, or take other types of transit to work. Rides home will be provided with taxi cabs, car-share vehicles, and other on-site fleet vehicles.

4.2.11 Marketing and Information

Marketing alternative transportation programs and providing information about transportation choices is critical to developing the necessary support for these travel modes. Marketing helps define a campus culture that is enthusiastic about using alternatives to the single occupant vehicle. The TMA's marketing efforts shall include:

4.2.11.1 Website with descriptions of all TDM programs, program forms (including ridematching forms), shuttle schedule information, and links to other transit providers

4.2.11.2 In-house, real-time ridematching, so that employees can instantly receive the names and phone numbers of employees who live in their area.

4.2.11.3 An office or "outlet" space in the main retail area of the NRP (or other central location) where employees can get information, pick up their EcoPasses, add revenue to their parking debit cards, etc.

Other recommended marketing efforts include:

4.2.11.4 Annual carpool registration drive

4.2.11.5 At least one annual transportation event per calendar year to occur when universities are in session

4.2.11.6 Printed materials

4.2.11.7 Mailings to all employees who pay for monthly parking to encourage them to use alternatives

4.2.11.8 Information kiosk(s) at the TMA office and at two to three other key locations at the NRP

4.2.12 Improved VTA Bus Service and Community Relations

4.2.12.1 The TMA will identify key areas from where NRP employees commute. The TMA will work with VTA and other transit providers to improve bus service to the research park.

4.2.12.2 The TMA will develop and maintain liaison with employees, neighboring employment centers, regional and local ridesharing programs. Where effective, and at board discretion, the TMA may expand or combine forces with other employers in the area.

4.2.13 Parking Management

The TMA will be responsible for managing the shared parking supply and ensuring its efficient use (See Section 5.0). TMA management of the shared supply will create uniform parking policies and procedures to support the shared system. The TMA will

provide or contract for central management of parking payment, maintenance, security, operations, information and janitorial services.

4.2.14 Site Wide TDM Program Costs and Phasing

It is anticipated that the cost of the site-wide TDM program for all NRP land uses, including those subject to the terms of the CUP EA, will range from \$915,000 during Phase 1 to \$4,020,000 during Phase 4. This cost includes all program operating costs, TMA staffing and overhead costs, and program evaluation costs. Figure 4-6 shows an estimated time line for the implementation of the site-wide TDM program. Figure 4-7 shows the estimated program costs.

Figure 4-6: Site Wide TDM Program Phasing

Program	Start-Up
TMA Establishment	Phase 1
Cordon Count	Phase 1
Shuttle Program	Phase 1
Preferential HOV parking	Phase 1
Bicycle racks	Phase 1
Site-wide EcoPass	Phase 1
Guaranteed Ride Home Program	Phase 1
Marketing and Information	Phase 1
Staffing	Phase 1
Parking management	Phase 1
Parking pricing	Phase 2
Bicycle promotional programs	Phase 2
Car-share program management	Phase 2
On-site bicycle fleet	Phase 2

Figure 4-7: Estimated Site-Wide TDM Program Costs (2001 \$)

	Estimated Annual Costs At Recommended Program Levels¹⁹			
	Phase 1²⁰	Phase 2	Phase 3	Phase 4
Shuttle Program ²¹	\$415,000	\$1,600,000	\$2,700,000	\$2,700,000
HOV Parking & Carpool programs ²²		\$5,000	\$6,000	\$6,000
Bicycle Racks ²³	\$5,000	\$4,000	\$3,000	\$4,000
Bicycle promotional programs		\$5,000	\$7,500	\$7,500
Car-share program management ²⁴		\$5,000	\$7,500	\$7,500
On-site bicycle fleet ²⁵		\$60,000	\$20,000	\$25,000
Site-wide EcoPass ²⁶	\$230,000 ²⁷	\$417,000	\$554,000	\$685,000
Guaranteed Ride Home Program	\$5,000	\$5,000	\$7,500	\$10,000
Marketing and Information	\$10,000	\$20,000	\$30,000	\$40,000
Staffing ²⁸	\$100,000	\$250,000	\$300,000	\$300,000
TMA Overhead & Admin ²⁹	\$125,000	\$125,000	\$150,000	\$175,000
Cordon Count	\$25,000	\$35,000	\$50,000	\$60,000
TOTAL	\$915,000	\$2,531,000	\$3,835,500	\$4,020,000

¹⁹ Costs figured based on number of employees per phase as described in Section 3.1.3.

²⁰ Assumes no housing in Bay View until Phase 2.

²¹ Based on program described in Section 4.2.1 and \$45/hour operating costs.

²² Costs are included in staffing costs and TMA administrative fee costs.

²³ Purchase and installation of bike rack parking spaces for 3% of employee/daytime student count @ avg. \$50 per rack space + installation, etc.

²⁴ Costs are included in staffing costs and TMA administrative fee costs.

²⁵ Bicycle purchase + technology + replacement and maintenance; Purchase bikes for 2% of employee/daytime student population bikes @ \$500/bike (cost averaged over the 3 phases)

²⁶ \$55 per employee * # of employees at end of each phase. It is possible that this cost could be lowered given the large number of students and employees at the NRP or if the student portion were funded through student fees, or if the NRP TMA joined with another TMA.

²⁷ Includes additional money for program start-up and promotion.

²⁸ \$100K per FTE salary & benefits. 1.5 FTEs in phase 1; 2.5 FTEs in phase 2; 3.0 FTEs in phases 3 & 4.

²⁹ Office rent, equipment and supplies

4.3 Partner/Lessee Site-Wide TDM Programs Required a Part of Site Development

4.3.1 Pedestrian Path Network -- As part of the development of the NRP, partners/lessees will be responsible for the development of a pedestrian path network. Guidelines for development of the pedestrian network are included in the NRP Design Guidelines.

4.3.2 Bicycle Path/Lane Network -- As part of the development of the NRP, partners/lessees will be responsible for the development of the basic roadway network. The roadway network will feature bike lanes along its entire length. Guidelines for development of the bicycle network are included in the NRP Design Guidelines and in "Bicycle Technical Guidelines: A Guide for Local Agencies in Santa Clara County" published by the Valley Transportation Authority. In addition to following these two documents for guidance, the bicycle lanes shall be designed by someone with specific expertise in bicycle facilities engineering to ensure that a comprehensive network of safe, effective cycling routes is developed throughout the NRP and that intersection design addresses both bicycle and motorized vehicle turning movements.

4.3.3 On-Site Housing -- As part of the development of the NRP, partners/lessees will construct housing units within the NRP and at the Bay View site. On-site housing is a critical component to reducing trips at the NRP.

4.3.3.1 Residents located in the Bay View housing district will not be eligible to buy daily parking located within the NRP.

4.3.3.2 Residents located in housing within the NRP will not be able to buy a parking permits for areas within the NRP except for the residential parking permits available for parking near their homes.

4.3.3.3 One to two residents of each housing unit must be affiliated with the Ames Research Center (depending on the type of housing).

4.3.3.4 Housing will be designed for both students (graduate and undergraduate) as well as faculty, visiting faculty, and other site employees

4.3.3.5 Housing areas will be designed using street grids that allow convenient shuttle and bus circulation.

4.3.3.6 Bicycle parking will be incorporated into unit design to allow for secure, convenient, covered bicycle parking at each unit.

4.3.3.7 Housing areas will include the same bicycle and pedestrian path guidelines that apply to the rest of the NRP.

For the purpose of the TDM Plan, the AVR goal of 1.72 relates to employment and school trips attracted by the NRP as an employment/ educational site. Trips generated by the on-site housing that are traveling to destinations outside the NRP will not be counted in the annual AVR goal assessment. (See Section 3.5.2 for Cordon Count Conceptual Plan)

4.3.4 On-Site Fitness Center: An on-site fitness facility allows employees to access gym facilities without having to drive off-site. Partners are required to provide on-site fitness facilities such that anyone working or attending school at the NRP will have the opportunity to use these facilities. It is at the discretion of the NRP partners how this requirement will be accommodated. For

example, some (or all) partners may want to share such facilities between them. This could require joint development of such a facility or a cross-partner fee structure.

4.3.5 Site Signage –

4.3.5.1 Clear, well-placed, well-designed signage is critical to convenient travel and way-finding whether a person is in a car, on foot, or on a bike. As part of the development of the NRP, all buildings will be clearly identified to ensure easy way finding. Building identification will be provided at building entrances that face bicycle and pedestrian paths. The type-face will be large enough to be read by bicyclists or pedestrians from the adjacent bicycle or pedestrian pathway. Signs should be posted to direct bicyclists to parking racks and long-term bike parking locations that may not be readily apparent. Wherever a “No Bicycle Parking” sign is positioned, additional sign information should direct cyclists to the location of the nearest bike parking. (Additional guidelines about bicycle signage can be found in “Bicycle Technical Guidelines: A Guide for Local Agencies in Santa Clara County,” produced by the Valley Transportation Authority.)

4.3.5.2 Directional signs will be located at key intersections to point the way to the sub-areas of the NRP (CMU, UCSC, museums, Conference & Training Center, etc.) and to the Bay View. These directional signs will be designed to be easily read by passing cars, bicycles, and pedestrians. Bike route signage will include directional information such as an arrow and the name of the destination indicated.

4.3.5.3 Site maps showing all parts of the NRP and its relationship to the rest of the Ames Research Center will be provided at main pedestrian gathering places. These signs will show the network of pedestrian and bike paths, shuttle routes, shared-facility parking, common retail areas, and common-use open spaces.

4.3.6 On-Site Retail, Open Space and Other Amenities: On-site retail, open space and other amenities will also be developed by the NRP partners. Although not developed for the sole purpose of mitigating trips, these on-site services are a critical trip reduction strategy. At a minimum, the on-site retail will feature:

4.3.6.1 A variety of food vendors, including “fast” or convenience food outlets as well as higher-quality food service choices

4.3.6.2 Coffee shop(s)

4.3.6.3 Book store

4.3.6.4 Automatic Teller Machines

4.3.6.5 On-Site Child Care

4.3.6.6 Bike shop

4.3.6.7 Postal and shipping services or on-site delivery

4.3.6.8 On-site retail will be ground-floor, street-facing retail, developed along pedestrian-friendly corridors. The on-site child care will most likely be developed through the Partner Tenant Association at the NRP and Bay View and run by a third party child care provider. If the demand for child care services are greater than space available, priority for child care slots should go to

employees living in on-site housing and to employees who use alternatives to the single-occupant vehicle to get to the NRP.

4.4 Required Partner/Lessee Programs

4.4.1 Class I³⁰ Bicycle Parking – Commuters and Residents

4.4.1.1 As part of the development of the NRP, each partner/lessee is required to provide secure, covered bicycle parking for long-term bicycle parking (i.e. 8 hours per day) at their site. The following guidelines explain the requirements for the provision of this secure bike parking:

4.4.1.2 Each partner must provide enough covered, enclosed bicycle parking within the NRP employment area to accommodate 3% of its daytime employee/student population

4.4.1.3 The number of bicycles that can be parked in any one covered, secure area can vary based on expected demand in that area

4.4.1.4 Housing areas must be developed to provide secure, ground-floor, covered storage spaces for two bicycles per unit.

4.4.1.5 Class I bike parking can be provided through one of the following:

4.4.1.5.1 Parking in buildings: allowing cyclists to bring bikes into offices or providing controlled-access space within a building to allow bike parking. If the latter, the location within the building must be convenient to the majority of the building users and must ensure building safety.

4.4.1.5.2 Parking in a controlled-access structure located on the NRP site (e.g. a “bike cage” or “bike structure/house”)

4.4.1.6 Regardless of the strategy used to provide long-term bicycle parking, the parking must be strategically located in areas of high demand, be close to building clusters and offer convenient access to buildings.

4.4.1.7 Structures will be designed in accordance with the NRP design guidelines and must blend in with their surrounding architecture.

4.4.1.8 Each structure will be accessed with card-key technology. Any partner that provides structures or cages must coordinate with the NRP TMA to ensure that its card-key technology is consistent with any card-access guidelines established for the NRP.

4.4.1.9 Bicycle racks will be provided within the structures.

4.4.1.10 Partners may coordinate with each other to provide joint facilities in areas where they may be convenient to more than one partner location.

³⁰ Class I bicycle parking is defined as bike parking that protects the entire bicycle and components from theft, vandalism, or inclement weather.

4.4.1.11 The NRP TMA will be available to administer and manage the distribution of bike cage access cards and coordinate with bicyclists on use of the bike structures.

4.4.2 Class II³¹ Bicycle Parking at Building Entrances

4.4.3 All NRP partners, including the museums and the Conference & Training Center, are required to provide Class II bicycle parking at their site's buildings. Providers of bicycle parking shall follow the guidelines for bicycle rack design outlined in section 4.2.4.1. In addition to the guidelines for bicycle rack placement outlined in section 4.2.4.2, the partners/lessees/tenants shall follow these guidelines for rack placement:

4.4.3.1 Additional Guidelines for Bicycle Rack Placement for Partners/Lessees/Tenants

4.4.3.2 University partners shall provide at least 1 bicycle rack parking space per 9 student classroom seats (per the VTA *Bicycle Technical Guidelines*).

4.4.3.3 Non-university partners (other than museum partners) shall provide bicycle rack parking spaces to accommodate at least 3% of their daytime population.

4.4.3.4 Museum partners shall provide bicycle rack parking spaces to accommodate at least 3% of their daily visitor projections.

4.4.3.5 Bike racks must be placed within 50 feet of building entrances and every building must have bicycle rack parking located within 200 feet of the main building entrance.

4.4.4 Showers and Clothing Lockers for Bicycle and Pedestrian Commuters: Each NRP partner/lessee must ensure that their employees (including contract employees and students, where applicable) have free access to showers and a changing facility with clothing lockers within a ½ mile distance from the work site. For employers that have an on-site fitness center, the showers and lockers at the fitness center count toward this requirement, as long as employees have free access to the showering and changing facilities.

4.4.5 Marketing and Information

4.4.5.1 NRP employers/tenants are required to provide information about transportation alternatives to all new employees. Employers can use materials developed by the TMA for this purpose.

4.4.5.2 NRP employers/tenants are required to provide information to their employees about the NRP's TDM programs by having a convenient, on-site location where employees can obtain program forms, brochures and information. NRP employers are required to cooperate with the placement of the NRP TMA's on-site information kiosks.

4.4.5.3 Employer/tenant cooperation in distributing TMA information to each employee will be required on an as-needed basis. The employer can do this by using internal resources to communicate with each employee through e-mail, voice-mail or inter-office mail. The

³¹ Class II bicycle parking is defined as a bike rack to which the frame and at least one wheel can be secured with a user-provided U-lock or padlock and cable.

employer can also choose to supply the TMA with access to full-employee e-mail lists and/or a full set of envelopes pre-labeled with inter-office addresses for each employee.

4.4.6 TDM program designee: Each employer/tenant is required to appoint a TMA liaison. This person will be responsible for passing TMA information on to employees, helping the TMA to coordinate events and marketing promotions, and special programming. The time commitment of this person to the TMA will vary, but may be as much as a .25 FTE requirement.

4.5 Optional Lessee/Tenant/Employer Programs

4.5.1 Employer-specific shuttles

Lessee/employer-specific shuttles could be developed for needs unique to that Lessee/employer. If a Lessee/employer wanted to develop such a program, the Lessee/employer is encouraged to work with the NRP TMA to integrate the service into the rest of the shuttle system. In addition, the Lessee could contract with the TMA to help develop and provide the service.

4.5.2 Local Shuttles

4.5.2.1 Lessees/employers may want join together to create shuttles beyond the four that would be provided by the TMA. For example, an employer may find that a large percentage of its population lives in a certain area nearby. The Lessee/employer may want to provide shuttle service between this area and campus or may want to work closely with public transit to increase service to this area. Another example might be a shuttle service to the airport.

4.5.2.2 As members of the board of directors of the TMA, Lessees can also direct the TMA to provide some of these additional services for the benefit of all if warranted. The TMA board would have to assess available revenues to provide such services and adjust the TMA funding mechanism accordingly.

4.5.3 Parking Cash-Out, Transportation Allowance, or Other Transportation Subsidies

(See also Section 5)

4.5.3.1 In addition to the site-wide transit subsidy program, an employer/Lessee may provide additional economic incentives to its employees who use alternatives to the single occupant vehicle. Subsidy programs that employers could implement include:

4.5.3.1.1 Parking Cash-Out

a. An employer may choose to offer its employees the choice of:

- (i) free parking (the employer would cover the cost of the employee parking);
- (ii) a transit/vanpool subsidy equal to the value of the parking (of which a portion would be tax-free); or
- (iii) a taxable carpool/walk/bike subsidy equal to the value of the parking.

4.5.3.1.2 Transportation Allowance

a. In a transportation allowance program, employees receive monthly allowances (e.g. \$50 per month) that they can apply to their parking or other transportation costs. An equal allowance is provided to all employees, regardless of their travel mode. Subsidies for transit and vanpooling are tax free up to \$100 per month. Parking subsidies are tax free up to \$175 per month.

b. Employers offering parking cash-out or transportation allowance programs will have the option to contract with the TMA to administer their programs.

4.5.3.1.3 Subsidies

An employer can also choose to offer subsidies for specific modes. For example, an employer may decide not to offer a complete transportation allowance program but may decide to provide financial incentives to people who bicycle or walk. Cash subsidies for carpooling, walking and bicycling are considered taxable income.

4.5.4 Alternative Work Hours

Alternative Work Hours can move trips outside the AM and PM peaks and/or reduce weekly trip generation. Alternative Work Hours programs include:

4.5.4.1 Flex-Time: Allowing employees to come and go from work on flexible schedules. This can range from ultimate flexibility (e.g. allowing employees to work any time of day) to requiring core hours (e.g. that employees must arrive within a window, such as 6 AM to 10 AM)

4.5.4.2 Compressed Work Weeks: Allowing employees to work a 40-hour work week in less than the standard 5-day work week (e.g. 4 10-hour days)

4.5.5 Telecommuting

Employers can institute telecommuting programs to either allow or encourage their employees to work at home. Telecommuting programs can range in scope. At the most basic level, a telecommuting program is simply a policy that allows employees to work remotely. Aggressive telecommuting programs will provide training, include detailed policies about the extension of the work place to home, and will provide home networking equipment.

4.5.6 Subscription Buses

Lessees/tenants may pursue funding or support the development of subscription buses with area transit agencies. Subscription bus services are set up from areas where an employer may have a concentration of employees living. Subscription bus services are generally cost effective for commute distances of 40 miles or more.

4.5.7 Long-Term Non-Commute Bicycle Storage

Employers/Lessees may want to provide secure locations for employees/students to store their bicycles on-site over the summer or over breaks.

4.5.8 Electric Carts/Bikes Requirement for Service Fleet

To reduce parking demand for Lessee/employer fleet vehicles, on-site fleet vehicles (e.g. security cars, delivery/maintenance vehicles, etc.) can be electric golf carts, mopeds, bicycles (electric or human-powered), or other human-powered vehicles.

5. PARKING

To achieve its goals the NRP must take a bold approach to parking supply, management and pricing. Implemented well, these strategies will reduce congestion, increase local transit use, encourage rational user choice, and help realize project goals.

Partner/Tenant/Lessee parking built or assigned shall be subject to these parking requirements as implemented by a TMA.

5.1 Parking Program Principles/Overview

- 5.1.1 Parking will be a shared resource throughout the NRP
- 5.1.2 A third party entity – the TMA -- will be created to manage the parking supply
- 5.1.3 Lessees will grant easements for parking as necessary to the TMA.
- 5.1.4 A certain amount of supply will be available for reserved use
- 5.1.5 All parking will be controlled-access parking.
- 5.1.6 There will be no free parking on site Monday through Friday from 6 AM to 7 PM³² once parking charges have been phased into the project. Employees, however, may select a parking subsidy if their employer offers a parking cash out, or transportation allowance, program. In these cases, the employer bears the cost of parking.
- 5.1.7 Parking charges will take effect during Phase 2 at the earliest feasible point in site development.
- 5.1.8 Parking is priced based on the cost to provide parking and fund the site-wide Transportation Demand Management programs.
- 5.1.9 Tenants, residents, employers, and employees are under no obligation to lease any minimum amount of the parking supply.
- 5.1.10 In any lease agreements, parking costs will be separated from other lease costs.
- 5.1.11 Employers that want to subsidize parking for their employees have the option to do so through parking cash-out arrangements only (i.e. employers are not able to absorb the cost of parking for their employees, unless they offer equal benefits to non-parking employees).
- 5.1.12 Parking pricing and card-access technology will be used to provide economic incentives to those using transportation alternatives on an occasional basis.

³² Fee parking will be extended to 9 PM when the number of students on site after 7 PM exceeds 2,000.

- 5.1.13 Access technology will be used to limit the need for extensive parking policing and permit systems.
- 5.1.14 Parking supply will reflect anticipated trip reduction and opportunities for shared-use parking.
- 5.1.15 Parking pricing will not reward long-term parkers.
- 5.1.16 In the long-term, technology will be maximized to provide economic incentives to those parking outside the peak by charging flexible parking rates based on demand.
- 5.1.17 Parking policies outlined in this plan apply to the housing that is located within the NRP. Reserved parking permits for housing within the NRP are not good for parking at other locations within the NRP.
- 5.1.18 Bay View Parking Policy -- parking for housing in the Bay View is not addressed in this TDM plan other than the following policy: Parking Permits that are good for parking in the Bay View would not be good for parking in the NRP.
- 5.1.19 Bay View Parking Recommendation -- It is recommended that the cost of parking in the Bay View be charged separately from the cost of housing in the Bay View.

5.2 Benefits of the Parking Program

5.2.1 Charging for Parking

- 5.2.1.1 Charging for parking is the single most effective strategy to encourage people to use alternatives to the single occupant vehicle.
- 5.2.1.2 Supports sustainability goals by not subsidizing drive alone behavior.
- 5.2.1.3 Parking charges have been found to reduce vehicle trips anywhere from 8% to 30%.

5.2.2 Third-Party Managed Supply

- 5.2.2.1 Eliminates the propensity for site-employers to provide free or reduced-cost parking to certain classes of employees due to union bargaining or other company policies.
- 5.2.2.2 Central management of parking payment, maintenance, security, operations, information and janitorial services, relieves partners/Lessees from these responsibilities.
- 5.2.2.3 The third-party managed parking supply separates the cost of parking from the cost of other real estate, which supports the project's sustainability goals.

5.2.3 Shared Parking

- 5.2.3.1 Reduces the total amount of parking that would otherwise be needed; reduces the amount of land that must be dedicated to parking; reduces paving of land; supports sustainability goals.
- 5.2.3.2 Shared parking supports the use of the large, centralized parking facilities that will be located at Hangar 1 and the light rail station. In addition to keeping cars out of the NRP core, this results in more efficient traffic flow as fewer parking entrances and exits are needed.

5.3 Supply

5.3.1 It is critical to not just price parking properly, but to supply it properly. The NASA Research Park will not need as much parking as would be required using traditional suburban office-park parking demand formulas. The TDM program aims to reduce employee commute trips 32% beyond what is traditionally achieved at Silicon Valley employment sites, while the mixed-uses at the site create the opportunity for shared parking. In addition, the on-site retail will be used by employees, residents and students of the research park, many of whom will walk to the retail. Supplying parking using standard demand rates would result in an oversupply of parking. This would be an inefficient use of valuable resources and would not support the parking pricing strategy.

5.3.2 Applying traditional parking ratios to the land uses within the NRP reveals that the research park (3,000,000 square feet approved under the proposed NADP plus 887,000 square feet approved under the CUP EA) would need about 10,050 parking spaces at build-out. Applying trip reduction expectations and the opportunities for shared parking reveals that the NRP will need about 7,972 parking spaces³³. This represents about a 28% reduction beyond what the traditional supply formulas would prescribe³⁴.

5.3.3 Mitigated Alternative 5 -- It should be noted that the parking supply numbers cited throughout this plan do not reflect the increased housing supply located within the NRP that is included in Mitigated Alternative 5. While the precise locations and types of parking cited in this plan are conceptual, the total parking supply number is set to reflect the reduced supply needed based on the parking pricing/TDM strategy. Thus, it may turn out that additional parking will be needed for on-site housing than what is outlined in this plan, but less parking will be needed in the commuter shared supply because more people live on-site. The net amount of parking would not increase beyond what is described in this plan. The estimates of parking supply are shown in Appendix B.

5.3.4 Those providing parking are required to equip at least 0.5% of their parking supply with electric vehicle charging capabilities that will be available to all parkers.

³³ NADP EIS land uses alone located within the NRP (not including those permitted under the CUP EA) would require 7,550 parking spaces using traditional formulas, but only 5,200 parking spaces based on trip reduction expectations.

³⁴ The benefits of shared parking have been used to reduce the amount of parking supplied by a wide range of percentages (from 10% to 100%) depending on the geography, land uses and transportation infrastructure. There are no strict formulas for determining the appropriate reduction.

5.4 Phase-In of Parking Charges and Parking Management

Parking will be built gradually over the course of the development. The NRP site currently has an abundance of open, surface parking lots estimated to supply about 2,500 parking spaces. Thus, it will be infeasible to control and charge for parking in the earliest stages of development. Since it is critical that parking be perceived as a valuable resource, the parking supply will be established as a controlled, priced resource as soon as feasible. It is estimated that this will take place during Phase 2.

5.4.1 Phase 1

5.4.1.1 It is anticipated (although not certain) that Phase 1 will occur prior to University construction. The development site currently has an abundance of open, surface parking lots. There are about 2,500 parking spaces located within the NRP including 1,500 located at Hangar 1. It is anticipated that in Phase 1 parking will be free, since the principles of supply and demand cannot support priced parking.

5.4.1.2 Upon commencing construction, developers/Lesseees are required to fence off the surface spaces located on the parcel. Toward the end of Phase 1, as more construction begins, the abundant, free parking supply will diminish. If a partner wants to fence off the surface supply on its parcel(s) prior to commencing construction, the partner may do so. If a partner wants to charge for parking during Phase 1, and can establish the necessary controls to do so, the partner is welcome to do so, and will be assisted by the TMA to manage the Phase 1 paid parking program.

5.4.1.3 Controlled access of the Hangar 1 lot will occur in the same timeframe as when the University Partner lots are fenced-off for construction. Controlled access of the Hangar 1 Lot would occur in Phase 1, if the University Partners fence off their lots in Phase 1.

5.4.1.4 Each partner/lessee/tenant will be required to sign the Transportation Demand Management Plan, acknowledging that parking will not remain free in subsequent phases of development and that the partner/lessee/tenant agrees to the terms of the TDM plan and its parking policies. The TDM Plan is also part of the terms of the NADP Environmental Impact Statement..

5.4.2 Phase 2

5.4.2.1 Parking charges will begin at the earliest feasible point in Phase 2. This point is contingent upon the phasing of development, the loss of the open, surface parking lots due to construction and the increasing number of employees working on site. The TMA will be responsible for working with the partners to manage the introduction of new parking supply and the elimination of the old supply. The TMA and its board will be responsible for determining the point at which parking charges will be implemented. In addition, all new parking structures and surface lots will be equipped with parking control technology from inception and will charge for parking as soon as they are brought on-line.

5.4.2.2 The existing surface parking supply located at Hangar 1 will be modified to create a controlled-access, paid lot during Phase 2. The employee population in Phase 2 will be 2,675 to 5,999 employees/students, while the pre-existing 2,500 surface spaces (Hangar + partner parcels) will have decreased due to site construction.

5.4.3 Phases 3 and 4

5.4.3.1 The TMA or another third party concessionaire will assume management of the parking supply (existing and constructed by site developers). To provide an example of one possibility of what fees could look like, general parking phasing assumptions are presented in Appendix B along with the resulting monthly parking costs. Parking phasing and the types of structures to be built over time will be determined at a later date based on construction phasing.

5.4.3.2 The TMA will manage the supply of parking and will return a portion of parking revenues to the owners of the parking lots. Rates will be set based on the parking revenues needed to cover parking and TDM program costs (see Section 5.9 and Appendix C) and parking location desirability (see Section 5.9). Revenues returned to each garage owner will be based on the cost to provide that particular parking supply. Revenues held by the TMA will be based on the amount needed to finance the site-wide TDM programs. Thus, the parking owners will receive parking revenues based on what it cost the owner to construct the supply (not on the rate charged in the structure they own).

5.5 **Parking Supply Phasing**

5.5.1 Phase 1

Phase 1 covers occupancy of the NRP up to 2,675 employees. The only parking that is expected to be built in this phase will be Lab Project parking. There are an additional 332 surface spaces that are needed for EA uses in the historical district. In Phase 1, these spaces will most likely be part of the existing supply. As construction takes place in subsequent phases, these spaces may be part of a new surface lot.

5.5.2 Phase 2

5.5.2.1 The TMA will begin managing the NRP-wide parking supply³⁵ at the time when parking demand becomes sufficient to make shared parking feasible. It is anticipated that this will occur during Phase 2, although the TMA board has the flexibility to determine the right point during Phase 2 for this transition to shared parking.

5.5.2.2 Upon transition of parking management to the TMA, the TMA will have the following parking responsibilities:

- 5.5.2.2.1 Create uniform parking policies and procedures to support the shared system
- 5.5.2.2.2 Interface with all employees to provide parking information
- 5.5.2.2.3 Centrally manage parking payment – this entails coordinating with the TMA board and employers to develop systems for revenue flow, reconciliation and employee parking pre-tax payment

³⁵ Such an arrangement was developed in Portland, Oregon when the Association for Portland Progress (APP), a non-profit business association, took over management of City-owned garages. APP became responsible for all revenue handling, policy setting, garage management, marketing, maintenance and security. The City continued to own the parking supply.

5.5.2.2.4 Centrally manage maintenance, security, operations, information and janitorial services

5.5.3 Phase 3 and 4

5.5.3.1 The TMA or a third party parking vendor will be responsible for financing, building and developing additional parking supply at Parcel 10/11 and coordinating this supply with the remainder of the shared parking supply.

5.6 **Parking Supply Distribution**

Figure 5-1 shows potential parking distribution and the phase in which it would be added.

Figure 5-1: Conceptual Plan for Parking Supply Location and Phasing

Location	Type of Parking	Number of Spaces	Phase Built
Lab Project	Garage	2,440	1
Parcels 12-15 (Historic District)	Existing surface lot	332 ³⁶	1
SUBTOTAL CUP EA		2,772	
Hangar 1	Existing surface parking	1,200 ³⁷	2
Parcels 12 – 15 (Historic District)	New surface/small lot parking	660	2
Parcel 7 (CHM)	New surface/small lot parking	80	2
Parcel 5 (University)	New surface/small lot parking	500	3
Parcel 6 (University Housing) ³⁸	New surface/small lot parking	495	3
Parcel 8 (Partner Parcel)	New structured parking	600	3
Parcel 16 (Partner Parcel)	New surface/small lot parking	165	3
Parcel 17 (Partner Parcel)	New surface/small lot parking	100	3
Parcel 10/11 (Transit Station)	New structured parking	1,400	4
Subtotal NADP EIS		5,200	
Total		7,972	

³⁶ In Phase 1, these spaces will most likely be part of the existing supply. As construction takes place in subsequent phases, these spaces may be part of a new surface lot.

³⁷ Includes 30 bus parking stalls for museum visitors

³⁸ The parking supply numbers in this NRP TDM Plan do not include Bay View. They also have not been updated to reflect changes in housing supply associated with Mitigated Alternative 5.

This distribution of the parking supply makes use of existing resources and places the majority of parking on the periphery of the NRP's core. Parking supply will be shared (see 5.7) with reserved supply designated in each location.

5.7 Shared and Reserved Parking

5.7.1 Parking located within a leased parcel will be included as part of the maximum square footage of allowable development within that parcel. Once parking charges are implemented, the partner/Lessee located within that parcel will not pay lease costs on the land that lies beneath the shared or reserved parking.

5.7.2 Nearly half of the parking supply will be shared between partners and tenants. To accommodate the functional needs of the partners and tenants, however, a certain amount of reserved³⁹ space will be available. It is anticipated that the reserved spaces will be located closer to partner buildings and will cost more than parking on the periphery.

5.7.3 Shared parking supports the use of the large, centralized parking facilities that will be located at Hangar 1 and the light rail station. It is anticipated that the majority of the shared spaces will be located on the periphery of the NRP and will cost less than parking within the NRP core.

5.7.4 Figure 5-2 shows the anticipated amounts and locations of parking that will be dedicated to shared and reserved use.

Figure 5-2: Conceptual Plan for Shared and Reserved Parking Supply by Location

Location	Reserved Supply	Shared Supply	Total Supply
Lab Project (CUP EA)	2,440 – Commercial Partner	0	2,440
Parcel 10/11 (Transit Station)	0	1,400	1,400
Hangar 1	500 – CASC/CMHC visitors	700	1,200
Parcels 12 – 15 (Historic District)	250 -- CTC	732 ⁴⁰	982
Parcel 7 (CHM)	40	40	80
Parcel 5 (University)	400 – Universities	100 ⁴¹	500
Parcel 6 (University Housing)	440 -- Residents	55	495
Parcel 8 (Partner Parcel)	0	600	600
Parcel 16 (Partner Parcel)	0	165	165
Parcel 17 (Historic Dist. Reno)	0	100	100
Total	4,070	3,892	7,972

5.8 Parking Costs

5.8.1 Free parking encourages people to drive, increases the costs of development, and encourages a built environment that does not put land to its highest and best use. The powerful subsidy of free parking makes driving the most economically advantageous and rational choice for travelers compared to walking, cycling, or using transit. Free parking is at odds with the goals of the NASA Research Park to reduce auto traffic and emissions.

³⁹ For the purposes of the TDM plan, "reserved spaces" are spaces that are not part of the shared supply, but are reserved for use by a particular partner. The partners may use these spaces to meet their needs.

⁴⁰ 332 parking spaces for uses approved under CUP EA.

⁴¹ The 100 non-reserved parking spaces within the University parcel will be designated High-Occupancy-Vehicle parking.

5.8.2 Appendix B provides detailed information about how the following parking costs were derived. Figure 5-3 summarizes the annual costs of providing parking at the NRP that would be passed on to the parking consumer. These costs include:

- 5.8.2.1 TMA fees for parking management & operations (revenue will equal about \$440,000 per year at build-out)
- 5.8.2.2 Construction, including gate access technology
- 5.8.2.3 In lieu of land opportunity costs, site-wide TDM program costs were included
- 5.8.2.4 Financing

Figure 5-3: Estimated Cost of Parking Supply (Phase 4 Costs)⁴²

Supply	Annual Cost Per Space	Total Number of Spaces	Annual Cost of Supply
New structured parking	\$1,868	4,940	\$9,228,000
New surface parking	\$888	1,832	\$1,332,000
Existing surface parking	\$728	1,200	\$874,000
Total		7,962	\$11,434,000

5.9 **Parking Fees**

5.9.1 Parking prices will be charged using a time-based strategy so that long-term or more-frequent parking is not rewarded with discounts. It is anticipated that this will be done using debit-card or smart card technology. For non-reserved spaces, the hourly rate per day will max out at eight hours and the daily rate per month will max out at 22 days per month. Anyone who parks a minimum of eight hours per day for 22 days per month would max out at the monthly parking rate. Employees, visitors, and students who park less than eight hours per day or less than 22 days per month will end up paying less than the monthly rates.

5.9.2 Reserved parkers pay a flat monthly fee for their reserved spaces. Weekend parking is free, except during events. Parking between 7 PM and 6 AM is also free.

5.9.3 The TMA, under the guidance of its board of directors, will develop a revenue and reconciliation model for the distribution of the parking fees generated to cover parking construction costs back to the parking owners. This will be determined based on parking data from the controlled-access card readers. Appendix C provides an understanding of the amount of revenue generated to cover the costs of the TDM program versus cover the costs of parking construction.

⁴² See Appendix C. Includes construction cost, financing, maintenance, site-wide TDM and management.

Figure 5-4: Estimated Parking Charges at Project Build-Out (2001\$)⁴³

	Monthly Cost	Annual Cost	Daily Cost	Hourly Cost
Pool Space Cost A (P6-8, P12-15, P16, P17)	\$92	\$1,104	\$4.20	\$0.55
Pool Space Cost B (Hangar 1)	\$85	\$1,020	\$3.85	\$0.45
Pool Space Cost C (Transit Center)	\$85	\$1,020	\$3.85	\$0.45
Museum Reserved Space Cost (Hangar 1)	\$75	\$900	\$3.40	\$0.45
Reserved Carpool Spaces (University Parcel 5)	\$75	\$900	\$3.40	\$0.45

Employees can use it for parking, transit costs, or pocket the cash if they choose to walk or bike.

- 5.9.4.5 Employers offering parking cash-out or transportation allowance programs will have the option to contract with the on-site TMA to administer their programs.

5.9.5 Subsidized Visitor Parking

Employers will be able subsidize their visitor parking in one of two ways:

- 5.9.5.1 Purchase a supply of reserved parking that the employer can designate as visitor parking. The employer will be responsible for paying the monthly reserved fee to the third party parking management association.
- 5.9.5.2 Purchase employer-provided validation stickers. These stickers will be priced at the market rates described above.

5.9.6 NRP Residential Parking Charges

Residents will pay for parking separately from their housing rental costs.

Reserved parking rates will apply at the NRP housing. Each resident in the NRP will be able purchase at least one parking space at their housing location. Residents may be able to purchase more than one on-site parking space on an as-available basis. Residents who do not want to pay the reserved rates for parking at their housing location have the option to park in the Transit Green garage or the Hangar 1 lot at the shared-pool parking rate.

5.10 Parking Controls/Technology

- 5.10.1 All parking will be controlled with card access technology. The following are the parking access technology guidelines.
- 5.10.2 The TMA will install and operate parking controls.
- 5.10.3 Prior to the formation of a TMA, Lessee's will set aside funds in a separate account to pay for their fair share of parking control costs at the time a TMA is established.
- 5.10.4 Parking access will be monitored through technology as opposed to manual policing of permits.
- 5.10.5 All parkers will use card-access technology to enter any parking supply.
- 5.10.6 Card-access technology will be consistent between garages and lots and will feed into the same database regardless of parking location.
- 5.10.7 Card access technology will be programmed to charge parkers based on an hourly/daily rate using debit-card technology.

- 5.10.8 Technology will be programmed to charge parkers an hourly rate until the parker “maxes out” at eight hours, and on a daily rate until the parker “maxes out” at 22 days per month. (There is no cost advantage to park long-term. There are cost advantages for parking less than full-time.)
- 5.10.9 Technology will be programmed to provide daily, weekly and monthly reports on:
 - 5.10.9.1 Who is parking (affiliation and other information requested by partners)
 - 5.10.9.2 # of vehicles accessing more than once per day
 - 5.10.9.3 access and egress by time and volume
- 5.10.10 Technology will be programmed to recognize multi-passenger vehicles (either by allowing 2 + ID badges to be swiped when one car is at the access gate or with monitoring cameras)
- 5.10.11 Technology will be programmed to allow any parker to easily check his/her parking account balance.
- 5.10.12 The parking access technology will be developed along with the NRP identification badge. Magnetic stripes on the employee ID badge will be used to program parking access information.

Appendix A

After accounting for NO_x emissions from construction, the following numbers of vehicle trips can be generated by NRP uses pursuant to the EIS in the following time frames. The number of vehicle trips shown in Figure A is below the estimated trip generation for the site.

Figure A NRP Vehicle Trip Cap Estimates Based on NO_x Limits (Uses pursuant to EIS)

Year	2005	2010	2015
Annual NOx Cap (tons)	100	100	100
a) Construction Source NOx Emissions Estimate (tons per year) ⁴⁵	76.1	58.32	0
b) Area Source NOx Emissions Estimate (tons per year) ⁴⁵	1.8	6.3	9.9
c) Mobile source NOx Emissions Estimate (tons per year) ⁴⁵	11.43	31.5	42.57
d) Additional NOx Emissions "available" before cap is reached	10.67	3.88	47.53
NOx "Potentially Available" for Vehicle Trips (tons/year) (c + d)	22.1	35.38	90.1
NOx "Potentially Available" for Vehicle Trips (grams/year)	20,066,800	32,125,040	81,810,800
Grams of NOx Emissions ⁴⁶ per Vehicle Trip (start + mileage ⁴⁷)	7.9	6.16	5.39
# of Vehicle Trips "Permitted" per Year Based on NOx Limit	2,540,101	5,215,104	15,178,256
Maximum # of One-Way Vehicle Trips "Permitted" per Weekday Based on NOx Limit	10,160	20,860	60,713

⁴⁵ Source: NADP EIS "Total Annual Air Pollutant Emissions, NOx"

⁴⁶ Source: ARB Emission Factor MVEI7G Model for Santa Clara County using the Santa Clara County vehicle mix

⁴⁷ Assumes an average of 6.9 miles per vehicle trip for trips in Santa Clara County. Source: BAAQMD

APPENDIX B: NRP PARKING SUPPLY

Appendix A shows that if traditional parking ratios were applied, development in the NRP would have to include over 10,000 parking spaces (column C). Under the proposed NADP, TDM and shared parking limit the number of parking spaces that will be built in this proposed development (column D). CUP EA parking supply is not reduced based on TDM, because this was not part of the EA requirements (column E). The total parking supply in the NRP with both projects is slated at 7,972 spaces (column F).

Table 2 provides more detail about how the NRP NADP parking reductions were determined.

TABLE 1: NRP PARKING SUPPLY

	A Total Base Units	B Parking Supply formula	C Parking Need (no TDM, no Shared Parking)	D Proposed NADP Parking Need (TDM & Shared Parking)	E CUP EA Parking Need	F Total Parking Need: CUP EA & Proposed NADP
Lab Project	120,000 sq ft ^A	N/A	460	N/A	460	460
Lab Project	600,000 sq ft ^A	3.3/1000 sq ft	1,980	N/A	1,980	1,980
Historic District	135,000 sq ft ^A	2.1/1000 sq ft	282 ^D	N/A	282	282
Retail	15,000 sq ft ^A	3.3/1000 sq ft	50	N/A	50	50
Office/HD R&D	448,645 sq ft ^A	3.3/1000 sq ft	1,481	975	N/A	975
University	7,372 daytime students & staff/faculty ^C	.45 * population				
			3,317	2,600	N/A	2,600
Public/Museum	1,000,000 annual visitors ^C	1/1000 Annual Visitors	1,000	750	N/A	750
Retail	152,000 sq ft ^B	4/1000 sq ft	608	65	N/A	65
Conf/Training	250 rooms ^B	1.3/CTC room	325	260	N/A	260
Recreation	25,000 sq ft ^B	4/1000 sq ft	100	25	N/A	25
Support	25,000 sq ft ^B	4/1000 sq ft	100	30	N/A	30
Housing	350 units ^B	350@1.5+1/4	613	495	N/A	495
TOTAL			10,315	5,200	2,772	7,972

^A per CUP EA

^B Source: NRP EIS per BAE

^C Source: BAE employment + University-provided # of daytime students

^D Source: NRP EIS, Alt. 5

Table 2: NRP NADP Parking Reductions

	Total Employees ^A	Daytime Students ^B	Daily Visitors	Parking Need
Office/HD R&D	1,792	N/A	179 ^C	975 ^I
University	4,032	3,000	N/A ^D	2,600 ^J
Public/Museum	115	N/A	3,177 ^E	750 ^K
Retail	347	N/A	N/A ^F	65 ^L
Conf/Training	250	N/A	390 ^G	260 ^M
Recreation	40	N/A	N/A ^H	25 ^N
Support	50	N/A	N/A ^H	30 ^N
Housing	N/A	N/A	N/A	495 ^O
	6,626	3,000		5,200
<i>Total Employee & Daytime Students at Buildout = 9,626 (~ 10,000)</i>				

^A Source: Bay Area Economics information provided for NADP EIS. Total employee numbers differ between EIS presentation of Alternative 5 and the NRP TDM plan, since the EIS includes Eastside Airfield and some Ames Campus employees. NRP TDM plan includes daytime university students.

^B Source: University estimates

^C 10% of daily employee population

^D Universities will attract visitors, but visitor trips are not used to calculate parking demand

^E Based on CMHC and CASC estimates

^F Retail will attract patron trips, but actual # is not used to calculate parking demand

^G 250 overnight visitors + 140 conference center day-users

^H Recreation & support will attract patron trips, but actual # is not used to calculate parking demand

^I Assumptions: 90% of employees on site at any one time, 58% require parking. Each visitor p-space turns over 4 times per day and 90% of visitors need parking.

^J Based on ratio of total students/staff/faculty to parking at six other UC schools (.35 spaces per student/staff/faculty)

^K visitors are "other" visitors, spaces turn over 1.5 times per day, 10% on transit; 90% in 2.5-person cars ~ 700 spaces

^L ITE standard for retail parking is 4 spaces per 1,000 sq ft. Assume that 90% of retail trips are coming from on-site users who parked in another location or who do not have a car on site. Therefore, only need 10% of the parking typical of standard = 0.4 space/1000 sq ft. 152,000 sq ft of retail space per EIS = 65

^M Assumptions: 60% of employees on site at any one time; 58% require parking (87 spaces). 50% of overnight guests fly in; of these 50% rent cars & 50% use shuttles/taxis = 62 spaces. 50% of overnight guest are local/regional & 70% bring cars = 87 spaces. 75% of day users are already on-site and walk or use shuttle. 25% of day users are coming from off-site & 60% bring cars = 21 spaces

^N Assumptions: 90% of employees on site at any one time; 58% require parking. Assume that patrons are coming from on-site, thus their demand has been counted in other line items.

^O 350 units @ 1.25 spaces/unit plus 1 visitor space per 6 units.

Appendix C

COSTS BASED ON LAND COST OF \$0 PER ACRE + TDM

COST PER PARKING SPACE	PHASE 2			PHASE 3			PHASE 4		
	Surface Parking	Garage Parking	Existing Supply	Surface Parking	Garage Parking	Existing Supply	Surface Parking	Garage Parking	Existing Supply
Capital Costs									
Construction cost per Space	\$2,000	\$11,500	\$200	\$2,000	\$11,500	\$200	\$2,000	\$11,500	\$200
Controlled-access, debit card technology per space	520	350	\$500	520	350	\$500	520	350	\$500
Project management at 3.45%	\$87	\$409	\$24	\$87	\$409	\$24	\$87	\$409	\$24
Land Cost Per Space 1	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Capital Cost Per Space	\$2,607	\$12,259	\$724	\$2,607	\$12,259	\$724	\$2,607	\$12,259	\$724
<i>Annual Capital Cost Per Space 2</i>	\$221	\$1,038	\$61	\$221	\$1,038	\$61	\$221	\$1,038	\$61
Operating Costs									
Annual maintenance	\$30	\$150	\$30	\$30	\$150	\$30	\$30	\$150	\$30
Utilities	\$5	\$8	\$5	\$5	\$8	\$5	\$5	\$8	\$5
Annual parking management/staff	\$50	\$75	\$50	\$50	\$75	\$50	\$50	\$75	\$50
Insurance	\$15	\$30	\$15	\$15	\$30	\$15	\$15	\$30	\$15
TDM (Program Cost divided by Total Spaces)	\$592	\$592	\$592	\$578	\$578	\$578	\$504	\$504	\$504
Total/Space	\$692	\$855	\$692	\$678	\$841	\$678	\$604	\$767	\$604
Total Annual Cost Per Space	\$913	\$1,893	\$753	\$899	\$1,879	\$740	\$825	\$1,805	\$666
Total to Cover TDM (in lieu of land fee of \$4.3 mil/acre)	\$592	\$592	\$592	\$578	\$578	\$578	\$504	\$504	\$504
Total to Cover Parking Construction, Maintenance, Debt	\$321	\$1,301	\$161	\$321	\$1,301	\$161	\$321	\$1,301	\$161

SUPPLY BY PHASE (including all CUP EA/NRP parking)

	Surface Parking	Garage Parking	Existing Supply	Total Supply	Cumulative Supply
PHASE 1	332	2440		2772	2772
PHASE 2	740		1200	1940	4712
PHASE 3	760	1100		1860	6572
PHASE 4		1400		1400	7972
NRP ONLY	1500	2500	1200	5200	
	\$481,099.25	\$3,252,424.65	\$193,577.61	\$3,927,102	755,211,8292

ANNUAL COST BY PHASE

	PARKING & TDM COSTS				PARKING COSTS ONLY				TDM COSTS	
	Surface Parking	Garage Parking	Existing Supply	Total	Surface Parking	Garage Parking	Existing Supply	Total		
PHASE 1	\$303,062	\$4,619,103	\$0	\$4,922,166	\$106,483	\$3,174,366	\$0	\$3,280,850	\$1,641,316	
PHASE 2	\$978,562	\$4,619,103	\$904,104	\$6,501,770	\$343,826	\$3,174,366	\$193,578	\$3,711,770	\$2,790,000	
PHASE 3	\$1,646,864	\$6,652,299	\$887,430	\$9,186,593	\$587,583	\$4,605,433	\$193,578	\$5,386,593	\$3,800,000	
PHASE 4	\$1,511,396	\$8,917,860	\$798,696	\$11,227,951	\$587,583	\$6,426,791	\$193,578	\$7,207,951	\$4,020,000	

COST (= FEES) AVERAGE OVER ALL TYPES OF SPACES BY PHASE

	Surface Parking	Garage Parking	Existing Supply	Total Cost	Cumulative Cost	Average Cost Per Space	Ave.Cost Per Space Per Month
PHASE 2	\$978,562	\$4,619,103	\$904,104	\$6,501,770	\$6,501,770	\$1,380	\$115
PHASE 3	\$683,197	\$2,067,098	\$0	\$2,750,295	\$9,186,593	\$1,398	\$116
PHASE 4		\$2,527,329	\$0	\$2,527,329	\$11,227,951	\$1,408	\$117

2 30-year financing at 7.5%

Appendix C, Page 2

FEES BY TYPE OF SPACE BY PHASE

Phase 1 -- Not Applicable

Phase 2

	Monthly	Annual Cost	# of Spaces	Annual Revenue	Daily Cost	Hourly Cost
Shared Space Cost A (P12-15)	\$85	\$1,020	822	\$838,440	\$3.86	\$0.48
Shared Space Cost B (Hangar 1)	\$80	\$960	700	\$672,000	\$3.64	\$0.45
Museum Reserved Space Cost (Hangar 1)	\$70	\$840	500	\$420,000	\$3.18	\$0.40
Non-Museum Reserved Space Cost	\$145	\$1,740	250	\$435,000	N/A	N/A
Lab Parking	\$145	\$1,740	2,440	\$4,245,600		
Totals			4,712	\$6,611,040		
Difference b/w cost of shared parking supply and revenues generated			0	\$109,270		

Phase 3

	Monthly	Annual Cost	# of Spaces	Annual Revenue	Daily Cost	Hourly Cost	% Change from Prior Phase
Shared Space Cost A (P6, P7, P8, P12-15, P16, P17)	\$88	\$1,056	1,742	\$1,839,552	\$4.00	\$0.50	3.5%
Shared Space Cost B (Hangar 1)	\$83	\$996	700	\$697,200	\$3.77	\$0.47	3.8%
Museum Reserved Space Cost (Hangar 1)	\$72	\$864	500	\$432,000	\$3.27	\$0.41	2.9%
Carpool Spaces (University Parcel 5)	\$72	\$864	100	\$86,400	\$3.27	\$0.41	N/A
Non-Museum Reserved Space Cost (P6, P5, P8, P12-15)	\$155	\$1,860	1,090	\$2,027,400	N/A	N/A	6.9%
Lab Parking	\$155	\$1,860	2,440	\$4,538,400	\$7.05	\$0.88	6.9%
Totals			6572	\$9,620,952			
Difference b/w cost of shared parking supply and revenues generated			0	\$434,359			

Phase 4

	Monthly	Annual Cost	# of Spaces	Annual Revenue	Daily Cost	Hourly Cost	% Change from Prior Phase
Shared Space Cost A (P6, P7, P8, P12-15, P16, P17)	\$92	\$1,104	1,742	\$1,923,168	\$4.18	\$0.52	4.5%
Shared Space Cost B (Hangar 1)	\$85	\$1,020	700	\$714,000	\$3.86	\$0.48	2.4%
Museum Reserved Space Cost (Hangar 1)	\$75	\$900	500	\$450,000	\$3.41	\$0.43	4.2%
Carpool Spaces (University Parcel 5)	\$75	\$900	100	\$90,000	\$3.41	\$0.43	4.2%
Non-Museum Reserved Space Cost (P6, P5, P12-15)	\$170	\$2,040	1,090	\$2,223,600	N/A	N/A	9.7%
Shared Space Cost C (P10/11)	\$85	\$1,020	1,400	\$1,428,000	\$3.86	\$0.48	N/A
Lab Parking	\$170	\$2,040	2,440	\$4,977,600	\$7.73	\$0.97	9.7%
Totals			7,972	\$11,806,368			
Difference b/w cost to supply parking and revenues generated			0	\$578,417			

A P P E N D I X B 2

DETAILED TRIP GENERATION
WORKSHEETS



Estimated Trip Generation for NASA re-use development

October 11, 2001

Alternative #1, CUP, No Additional Projects. This will form the baseline for analysis.

Estimated Trip Generation for NASA re-use development

October 11, 2001

Alternative #2

Zone	Use	Size	Units	Rates								Trips							
				AM				PM				AM				PM			
				Daily	In	Out	Total	In	Out	Total	Daily	In	Out	Total	In	Out	Total		
1 & 2	Apartment-Style Units	188 d.u.	9.66	0.20	1.08	1.28	1.01	0.50	1.50	1,816	39	202	241	189	93	282			
	Townhouse-Style Units	300 d.u.	9.66	0.18	0.97	1.15	0.90	0.45	1.35	2,898	55	290	345	271	134	405			
3	Low Density R & D	90 ksf	8.86	1.02	0.21	1.23	0.17	0.99	1.16	798	92	19	111	16	89	105			
	Removal of Room 583 Motel Rooms	168 rooms	-10.43	-0.23	-0.41	-0.64	-0.31	-0.27	-0.58	-1,314	-35	-62	-97	-47	-41	-88			
4	High Density R & D	0 ksf	7.13	0.95	0.13	1.08	0.20	0.98	1.18	0	0	0	0	0	0	0			
5 & 8	High Density R & D	353 ksf	7.13	0.95	0.13	1.08	0.20	0.98	1.18	2,517	336	46	382	71	344	415			
	n/a																		
	University	575 students	2.38	0.17	0.04	0.21	0.06	0.15	0.21	1,369	97	24	121	36	85	121			
6	High Density R & D	600 ksf	7.13	0.95	0.13	1.08	0.20	0.98	1.18	4,278	572	78	650	120	585	705			
7	Museum	70 ksf	7.00	0.41	0.05	0.46	0.09	1.07	1.16	490	29	3	32	6	75	81			
9	High Density R & D	12 ksf	7.13	0.95	0.13	1.08	0.20	0.98	1.18	86	11	2	13	2	12	14			
10	High Density R & D	140 ksf	7.13	0.95	0.13	1.08	0.20	0.98	1.18	998	133	18	152	28	137	165			
11	High Density R & D	110 ksf	7.13	0.95	0.13	1.08	0.20	0.98	1.18	784	105	14	119	22	107	129			
12	High Density R & D	500 ksf	8.42	1.10	0.15	1.25	0.21	1.02	1.23	4,211	551	75	626	105	512	616			
	High Density R & D	210 ksf	8.42	1.10	0.15	1.25	0.21	1.02	1.23	1,769	231	32	263	44	215	259			
	n/a																		
	University	342 students	2.38	0.17	0.04	0.21	0.06	0.15	0.21	814	57	14	72	22	50	72			
	Townhouse-Style Units	250 d.u.	9.66	0.18	0.97	1.15	0.90	0.45	1.35	2,415	46	242	288	226	111	338			
13	Regional Fire Facility	71 ksf	4.22	0.60	0.11	0.70	0.11	0.60	0.70	300	42	7	50	7	42	50			
	Regional Fire Facility	80 rooms	2.38	0.17	0.04	0.21	0.06	0.15	0.21	190	13	3	17	5	12	17			
	Warehouse	781 ksf	4.12	0.37	0.08	0.45	0.11	0.34	0.44	3,221	287	63	350	83	263	347			
	Low Density R & D	110 ksf	10.05	1.12	0.23	1.34	0.20	1.11	1.31	1,106	123	25	148	22	123	144			
	High Density R & D	360 ksf	9.86	0.31	0.04	0.36	0.06	0.28	0.33	3,549	113	15	128	20	99	119			
14	CMU, UCSC, ATCC, Other Shen Uses(LD R&D)	113 ksf	8.86	1.02	0.21	1.23	0.17	0.99	1.16	1,001	115	24	139	20	112	131			
	Ames Child Care	14 ksf	5.36	0.51	0.06	0.57	0.06	0.51	0.57	75	7	1	8	1	7	8			
	n/a																		
15	Conference/Training Rooms	280 rooms	6.70	0.37	0.27	0.64	0.33	0.34	0.67	1,876	104	75	179	92	96	188			
16	Historic Infill (HD R&D)	100 ksf	7.13	0.95	0.13	1.08	0.20	0.98	1.18	713	95	13	108	20	98	118			
17	Museum	390 ksf	6.11	0.41	0.05	0.45	0.09	1.02	1.11	2,383	158	18	176	35	398	433			
18	Space Camp (HD R&D)	140 ksf	7.13	0.95	0.13	1.08	0.20	0.98	1.18	998	133	18	152	28	137	165			
19	n/a																		
TDM Trip Reduction:				Bay View Total (Zone 12)				9,209	886	363	1,249	396	888	1,285					
	All areas but East Airfield	22.0%		On-site Housing Trip Reduction				-1,371	-137	-188	-325	-206	-176	-382					
	East Airfield only	6%		TDM Trip Reduction				-1,724	-165	-38	-203	-42	-157	-199					
				Net Bayview Trips				6,113	584	136	720	149	556	704					
				East Side Airfield Total (Zone 13)				8,366	578	114	692	138	539	677					
				On-site Housing Trip Reduction				-648	-129	-25	-154	-59	-121	-180					
				TDM Trip Reduction				-463	-27	-5	-32	-5	-25	-30					
				Net East Airfield Trips				7,255	422	84	506	73	393	467					
				Ames Campus Total (Zone 19)				0	0	0	0	0	0	0					
				On-site Housing Trip Reduction				0	0	0	0	0	0	0					
				TDM Trip Reduction				0	0	0	0	0	0	0					
				Net Ames Campus Trips				0	0	0	0	0	0	0					
				NASA Research Total (Zones 1-11,14-18)				21,767	2,047	782	2,829	910	2,466	3,376					
				On-site Housing Trip Reduction				-2,971	-326	-379	-704	-429	-398	-826					
				TDM Trip Reduction				-4,135	-379	-89	-467	-106	-455	-561					
				Net NRP Trips				14,661	1,343	315	1,657	375	1,613	1,988					
				Total Gross Trips				39,342	3,511	1,259	4,770	1,444	3,893	5,337					
				Total Net Trips				28,029	2,349	535	2,884	597	2,562	3,159					

Estimated Trip Generation for NASA re-use development

October 11, 2001

Alternative #3

Zone	Use	Size	Units	Rates						Trips						
				Daily	In	Out	Total	In	Out	Total	Daily	In	Out	Total	In	Out
1 & 2	Apartment-Style Units	188 d.u.	9.66	0.20	1.08	1.28	1.01	0.50	1.50	1,816	39	202	241	189	93	282
	Townhouse-Style Units	300 d.u.	9.66	0.18	0.97	1.15	0.90	0.45	1.35	2,898	55	290	345	271	134	405
3	Low Density R & D	90 ksf	8.86	1.02	0.21	1.23	0.17	0.99	1.16	798	92	19	111	16	89	105
	Removal of Room 583 Motel Rooms	168 rooms	-10.43	-0.23	-0.41	-0.64	-0.31	-0.27	-0.58	-1,314	-35	-62	-97	-47	-41	-88
4	High Density R & D	0 ksf	6.36	0.86	0.12	0.98	0.20	0.96	1.15	0	0	0	0	0	0	0
5 & 8	High Density R & D (Univ)	353 ksf	6.36	0.86	0.12	0.98	0.20	0.96	1.15	2,246	304	42	346	69	338	407
	University	575 students	2.38	0.17	0.04	0.21	0.06	0.15	0.21	1,369	97	24	121	36	85	121
	High Density R & D (Parcel 9)	750 ksf	6.36	0.86	0.12	0.98	0.20	0.96	1.15	4,771	647	88	735	147	719	866
6	High Density R & D	600 ksf	6.36	0.86	0.12	0.98	0.20	0.96	1.15	3,817	517	71	588	118	575	693
7	Museum	70 ksf	7.00	0.41	0.05	0.46	0.09	1.07	1.16	490	29	3	32	6	75	81
9	High Density R & D	12 ksf	6.36	0.86	0.12	0.98	0.20	0.96	1.15	76	10	1	12	2	11	14
10	High Density R & D	200 ksf	6.36	0.86	0.12	0.98	0.20	0.96	1.15	1,272	172	24	196	39	192	231
11	High Density R & D	150 ksf	6.36	0.86	0.12	0.98	0.20	0.96	1.15	954	129	18	147	29	144	173
12	High Density R & D	0 ksf	38.63	4.18	0.57	4.75	13.67	66.75	80.42	0	0	0	0	0	0	0
n/a																
n/a																
n/a																
n/a																
13	Warehouse	781 ksf	4.12	0.37	0.08	0.45	0.11	0.34	0.44	3,220	287	63	350	83	263	346
n/a																
n/a																
n/a																
14	CMU, UCSC, ATCC, Other Shen Uses(LD R&D)	113 ksf	8.86	1.02	0.21	1.23	0.17	0.99	1.16	1,001	115	24	139	20	112	131
Ames Child Care		14 emp	5.36	0.51	0.06	0.57	0.06	0.51	0.57	75	7	1	8	1	7	8
n/a																
15	Conference/Training Rooms	350 rooms	6.70	0.37	0.27	0.64	0.33	0.34	0.67	2,345	130	94	224	115	120	235
16	Historic Infill (HD R&D)	115 ksf	6.36	0.86	0.12	0.98	0.20	0.96	1.15	732	99	14	113	23	110	133
17	Museum	390 ksf	6.11	0.41	0.05	0.45	0.09	1.02	1.11	2,383	158	18	176	35	398	433
18	Space Camp (HD R&D)	200 ksf	6.36	0.86	0.12	0.98	0.20	0.96	1.15	1,272	172	24	196	39	192	231
19	n/a															
TDM Trip Reduction:				Bay View Total (Zone 12)						0	0	0	0	0	0	0
				On-site Housing Trip Reduction						0	0	0	0	0	0	0
				TDM Trip Reduction						0	0	0	0	0	0	0
				Net Bayview Trips						0	0	0	0	0	0	0
				East Side Airfield Total (Zone 13)						3,220	287	63	350	83	263	346
				On-site Housing Trip Reduction						-208	-43	-8	-51	-20	-40	-60
				TDM Trip Reduction						-181	-15	-3	-18	-4	-13	-17
				Net East Airfield Trips						2,831	229	51	281	60	210	269
				Ames Campus Total (Zone 19)						0	0	0	0	0	0	0
				On-site Housing Trip Reduction						0	0	0	0	0	0	0
				TDM Trip Reduction						0	0	0	0	0	0	0
				Net Ames Campus Trips						0	0	0	0	0	0	0
				NASA Research Total (Zones 1-11,14-18)						27,000	2,739	892	3,631	1,109	3,351	4,459
				On-site Housing Trip Reduction						-3,092	-362	-397	-758	-455	-435	-890
				TDM Trip Reduction						-5,260	-523	-109	-632	-144	-642	-785
				Net NRP Trips						18,649	1,854	386	2,240	510	2,275	2,785
				Total Gross Trips						30,220	3,025	955	3,980	1,192	3,614	4,806
				Total Net Trips						21,480	2,083	438	2,521	570	2,484	3,054

Estimated Trip Generation for NASA re-use development

October 11, 2001

Alternative #4

Zone	Use	Size	Units	Rates						Trips						
				AM			PM			AM			PM			
				Daily	In	Out	Total	In	Out	Total	Daily	In	Out	In	Out	Total
1 & 2	Apartment-Style Units	144 d.u.	9.66	0.20	1.08	1.28	1.01	0.50	1.50	1,391	29	155	184	145	71	216
	Townhouse-Style Units	221 d.u.	9.66	0.18	0.97	1.15	0.90	0.45	1.35	2,135	41	213	254	200	98	298
3	Low Density R & D	90 ksf	8.86	1.02	0.21	1.23	0.17	0.99	1.16	798	92	19	111	16	89	105
	Removal of Room 583 Motel Rooms	168 rooms	-10.43	-0.23	-0.41	-0.64	-0.31	-0.27	-0.58	-1,314	-35	-62	-97	-47	-41	-88
4	High Density R & D	0 ksf	7.55	1.00	0.14	1.14	0.20	0.99	1.19	0	0	0	0	0	0	0
5 & 8	High Density R & D	336 ksf	7.55	1.00	0.14	1.14	0.20	0.99	1.19	2,536	337	46	382	68	332	400
	Low Density R & D	0 ksf	8.86	1.02	0.21	1.23	0.17	0.99	1.16	0	0	0	0	0	0	0
	University	548 students	2.38	0.17	0.04	0.21	0.06	0.15	0.21	1,304	92	23	115	35	81	115
6	High Density R & D	600 ksf	7.55	1.00	0.14	1.14	0.20	0.99	1.19	4,529	601	82	683	121	593	714
7	Museum	70 ksf	7.00	0.41	0.05	0.46	0.09	1.07	1.16	490	29	3	32	6	75	81
9	High Density R & D	0 ksf	7.55	1.00	0.14	1.14	0.20	0.99	1.19	0	0	0	0	0	0	0
10	High Density R & D	57 ksf	7.55	1.00	0.14	1.14	0.20	0.99	1.19	430	57	8	65	12	56	68
11	High Density R & D	40 ksf	7.55	1.00	0.14	1.14	0.20	0.99	1.19	302	40	5	46	8	40	48
12	High Density R & D	1,666 ksf	6.91	0.93	0.13	1.05	0.20	0.97	1.17	11,512	1,545	211	1,755	331	1,616	1,947
	Low Density R & D	0 ksf	9.05	1.03	0.21	1.25	0.18	1.01	1.19	0	0	0	0	0	0	0
	University	205 students	2.38	0.17	0.04	0.21	0.06	0.15	0.21	488	34	9	43	13	30	43
	Low Density R & D	200 ksf	9.05	1.03	0.21	1.25	0.18	1.01	1.19	1,810	207	42	249	36	201	237
	Townhouse-Style Units	550 d.u.	9.66	0.18	0.97	1.15	0.90	0.45	1.35	5,313	101	531	633	497	245	743
13	Regional Fire Facility	71 ksf	4.22	0.60	0.11	0.70	0.11	0.60	0.70	300	42	7	50	7	42	50
	Regional Fire Facility	80 rooms	2.38	0.17	0.04	0.21	0.06	0.15	0.21	190	13	3	17	5	12	17
	Low Density R & D	110 ksf	10.05	1.12	0.23	1.34	0.20	1.11	1.31	1,106	123	25	148	22	123	144
	High Density R & D	480 ksf	9.22	0.50	0.07	0.57	0.09	0.45	0.54	4,427	242	33	275	44	216	260
	Warehouse	781 ksf	4.12	0.37	0.08	0.45	0.11	0.34	0.44	3,221	287	63	350	83	263	347
14	CMU, UCSC, ATCC, Other Shen Uses(LD R&D)	113 ksf	8.86	1.02	0.21	1.23	0.17	0.99	1.16	1,001	115	24	139	20	112	131
	Ames Child Care	14 emp	5.36	0.51	0.06	0.57	0.06	0.51	0.57	75	7	1	8	1	7	8
	n/a															
15	Conference/Training Rooms	260 rooms	6.70	0.37	0.27	0.64	0.33	0.34	0.67	1,742	97	70	166	85	89	174
16	Historic Infill (HD R&D)	50 ksf	7.55	1.00	0.14	1.14	0.20	0.99	1.19	377	50	7	57	10	49	60
17	Museum	390 ksf	6.11	0.41	0.05	0.45	0.09	1.02	1.11	2,383	158	18	176	35	398	433
18	Space Camp (HD R&D)	55 ksf	7.55	1.00	0.14	1.14	0.20	0.99	1.19	415	55	8	63	11	54	65
19	n/a															
TDM Trip Reduction:				Bay View Total (Zone 12)				19,123	1,887	793	2,680	877	2,093	2,969		
				On-site Housing Trip Reduction				-2,980	-286	-402	-688	-438	-370	-808		
	All areas but East Airfield	22.0%		TDM Trip Reduction				-3,551	-352	-86	-438	-97	-379	-476		
	East Airfield only	6%		Net Bayview Trips				12,591	1,249	305	1,554	342	1,344	1,686		
				East Side Airfield Total (Zone 13)				9,244	707	132	839	162	656	818		
				On-site Housing Trip Reduction				-750	-146	-28	-173	-67	-136	-203		
				TDM Trip Reduction				-510	-34	-6	-40	-6	-31	-37		
				Net East Airfield Trips				7,984	528	98	625	89	489	577		
				Ames Campus Total (Zone 19)				0	0	0	0	0	0	0		
				On-site Housing Trip Reduction				0	0	0	0	0	0	0		
				TDM Trip Reduction				0	0	0	0	0	0	0		
				Net Ames Campus Trips				0	0	0	0	0	0	0		
				NASA Research Total (Zones 1-11,14-18)				18,596	1,765	619	2,383	725	2,103	2,829		
				On-site Housing Trip Reduction				-2,457	-283	-285	-568	-334	-332	-666		
				TDM Trip Reduction				-3,551	-326	-73	-399	-86	-390	-476		
				Net NRP Trips				12,588	1,156	261	1,416	305	1,381	1,687		
				Total Gross Trips				46,962	4,359	1,543	5,902	1,764	4,852	6,616		
				Total Net Trips				33,164	2,932	663	3,595	737	3,214	3,950		

Estimated Trip Generation for NASA re-use development

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Alternative #5

Zone	Use	Size	Units	Rates						Trips						
				AM			PM			AM			PM			
				Daily	In	Out	Total	In	Out	Total	Daily	In	Out	Total	In	Out
1 & 2	Apartment-Style Housing n/a	290 d.u.	9.66	0.20	1.08	1.28	1.01	0.50	1.50	2,801	59	312	371	291	144	435
3	Low Density R & D	90 ksf	9.02	1.03	0.21	1.24	0.18	1.00	1.18	812	93	19	112	16	90	106
	Removal of Room 583 Motel Room	168 rooms	-10.43	-0.23	-0.41	-0.64	-0.31	-0.27	-0.58	-1,314	-35	-62	-97	-47	-41	-88
4	High Density R & D	29 ksf	7.13	0.95	0.13	1.08	0.20	0.98	1.18	207	28	4	31	6	28	34
5 & 8	High Density R&D (Univ.)	406 ksf	7.13	0.95	0.13	1.08	0.20	0.98	1.18	2,895	387	53	440	81	396	477
	University Classrooms	662 students	2.38	0.17	0.04	0.21	0.06	0.15	0.21	1,576	111	28	139	42	97	139
	High Density R&D (e/o Cody)	195 ksf	7.13	0.95	0.13	1.08	0.20	0.98	1.18	1,391	186	25	211	39	190	229
6	High Density R & D (LMartin)	600 ksf	7.13	0.95	0.13	1.08	0.20	0.98	1.18	4,279	572	78	650	120	585	705
7	Computer Museum	120 ksf	7.00	0.41	0.05	0.46	0.09	1.07	1.16	840	50	6	55	11	128	139
9	High Density R & D	0 ksf	7.13	0.95	0.13	1.08	0.20	0.98	1.18	0	0	0	0	0	0	0
10	High Density R & D	0 ksf	7.13	0.95	0.13	1.08	0.20	0.98	1.18	0	0	0	0	0	0	0
11	High Density R & D	0 ksf	7.13	0.95	0.13	1.08	0.20	0.98	1.18	0	0	0	0	0	0	0
12	n/a															
	n/a															
	n/a															
	Townhouse-Style Units	750 d.u.	9.66	0.18	0.97	1.15	0.90	0.45	1.35	7,245	138	725	863	678	334	1,013
13	Regional Fire Facility	0 ksf	4.22	0.60	0.11	0.70	0.11	0.60	0.70	0	0	0	0	0	0	0
	Regional Fire Facility	0 rooms	2.38	0.17	0.04	0.21	0.06	0.15	0.21	0	0	0	0	0	0	0
	n/a															
	n/a															
	Warehouse	0 ksf	4.12	0.37	0.08	0.45	0.11	0.34	0.44	0	0	0	0	0	0	0
14	CMU, UCSC, ATCC, Other Shen U	113 ksf	9.02	1.03	0.21	1.24	0.18	1.00	1.18	1,020	117	24	141	20	114	134
	Ames Child Care	14 emp	5.36	0.51	0.06	0.57	0.06	0.51	0.57	75	7	1	8	1	7	8
		0 ksf	9.02	1.03	0.21	1.24	0.18	1.00	1.18	0	0	0	0	0	0	0
15	Conference/Training Rooms	350 rooms	6.70	0.37	0.27	0.64	0.33	0.34	0.67	2,345	130	94	224	115	120	235
16	Historic Infill (HD R&D)	155 ksf	7.13	0.95	0.13	1.08	0.20	0.98	1.18	1,105	148	20	168	31	151	182
17	Museum	500 ksf	6.11	0.41	0.05	0.45	0.09	1.02	1.11	3,055	203	23	225	44	511	555
18	Space Camp (HD R&D)	70 ksf	6.11	0.41	0.05	0.45	0.09	1.02	1.11	428	28	3	32	6	71	78
19	ARC (LD R&D)	500 ksf	7.70	0.92	0.19	1.11	0.15	0.86	1.02	3,850	461	95	556	76	432	508
TDM Trip Reduction:				Bay View Total (Zone 12)						7,245	138	725	863	678	334	1,013
				On-site Housing Trip Reduction						-2,536	-97	-508	-605	-476	-234	-710
	All areas but East Airfield	22.0%		TDM Trip Reduction						-1,036	-9	-48	-57	-45	-22	-67
	East Airfield only	6%		Net Bayview Trips						3,673	32	169	201	158	78	236
				Eastside/Airfield Total (Zone 13)						0	0	0	0	0	0	0
				On-site Housing Trip Reduction						0	0	0	0	0	0	0
				TDM Trip Reduction						0	0	0	0	0	0	0
				Net East Side Airfield Trips						0	0	0	0	0	0	0
				Ames Campus Total (Zone 19)						3,850	461	95	556	76	432	508
				On-site Housing Trip Reduction						-600	-120	-23	-143	-55	-113	-168
				TDM Trip Reduction						-715	-75	-16	-91	-5	-70	-75
				Net Ames Campus Trips						2,535	266	56	322	16	249	265
				NRP/ARC Total (Zones 1-11,14-19)						21,515	2,083	627	2,710	776	2,592	3,369
				On-site Housing Trip Reduction						-3,897	-622	-308	-930	-453	-638	-1,091
				TDM Trip Reduction						-3,876	-321	-70	-392	-71	-430	-501
				Net NRP/ARC Trips						13,742	1,140	249	1,388	252	1,525	1,777
				Total Gross Trips						32,610	2,682	1,446	4,128	1,531	3,358	4,889
				Total Net Trips						19,950	1,438	473	1,911	426	1,851	2,278

Housing Trip Rate Calculation

Under Alternative 5

187 apts Includes two residents (e.g., students, faculty, staff, etc.) per unit = 374 students/employees

Assume 65% of students/employees are traveling during AM peak hour = 240

Thus, the trip rate/unit = 1.28 in the AM peak hour

Based on typical apartment rates, the AM peak hour is approximately 85% of the AM rate.

Thus, the PM peak hour trip rate/unit = 1.50

550 townhomes, where one resident must work on-site

Assume 75% of on-site employees are traveling during AM peak hour = 413

Also, assume 40% of units have a second person traveling during the peak hour = 220

Total number of people traveling during peak hour = 632.5

Thus, the trip rate/unit = 1.15 in the AM peak hour

Based on typical apartment rates, the AM peak hour is approximately 85% of the AM rate.

Thus, the PM peak hour trip rate/unit = 1.35

These rates were used for all alternatives

Reductions to account for people using alternative modes (shuttle, bike, walk) were taken as follows:

75% for apartment residents

65% for townhome residents

This would be driven by on-site parking charges, shuttle service to on-site locations, Caltrain, and light rail, on-site child care, retail/services (ATM, dry cleaning, etc.), fitness center and other amenities

A P P E N D I X B 3

APPROVED TRIP ASSIGNMENTS AT
INTERSECTIONS



Approved Developments - Trips at Study Intersections

Intersection: (64) Shoreline/Middlefield

Peak Hour: AM

Development	Northbound			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed		6				40						
1116 Mathilda		1				3						
771 N. Mathilda												
375 N. Pastoria		0		0	0	2	0	0	0	0	0	0
13. Sandy Plaza	0	0	0	0	2	0	0	0	0	0	0	0
1350 Geneva/1345 Crossman		1			1							
7.Mozart	0	0	0	0	0	0	0	0	0	0	0	0
1277 Borregas TSH Office												
1260 Crossman-Network Appliance-Phillips	0	1	0	0	6	0	0	0	0	0	0	0
1220 N. Mathilda-Juniper Networks		1			4							
1302 N. Mathilda-Menlo Equities		1			5							
10. Yahoo	0	2	0	0	17	0	0	0	0	0	0	0
9. Ariba	0	2	0	0	15	0	0	0	0	0	0	0
3. Town Center Mall	0	0	0	0	0	0	0	0	0	0	0	0
4. Olson Site	0	0	0	0	0	0	0	0	0	0	0	0
11. Synopsis	0	1	0	0	4	0	0	0	0	0	0	0
12. Menlo Equities	0	1	0	0	7	0	0	0	0	0	0	0
113 S. Mary Apts	0	0	0	0	0	0	0	0	0	0	0	0
901 SS Citation Homes	0	0	0	0	0	0	0	0	0	0	0	0
Olson Site	0	0	0	0	0	0	0	0	0	0	0	0
16. First SJ Housing	0	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	0	0	0
Peery's Chubby's	0	10	0	0	33	0	0	0	0	0	0	0
Fairchild Veritas	0	0	0	0	0	0	0	0	0	0	0	0
20. 575 Middlefield	0	1	0	0	2	0	0	0	0	0	0	0
21. 441 Logue	0	0	0	0	1	0	0	0	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	0	1	0	0	10	0	0	0	0	0	0	0
24. 500 Ferguson	0	2	0	0	14	0	0	0	0	0	0	0
313 Fairchild		1			4							
615 National												
425 National												
1200 Crittenden							89			12		
1950 Charleston Phase II							28			4		
400 Castro	0	0	3	0	2	2	0	3	0	19	19	0
401 Castro	11				10		1	2				
861 W. Dana	10						1	1		9		
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	21	32	3	0	172	12	1	121	3	19	44	0

Intersection: (64) Shoreline/Middlefield

Peak Hour: PM

Development	Northbound			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed		40				7						
1116 Mathilda		3				1						
771 N. Mathilda												
375 N. Pastoria		1				1						
13. Sandy Plaza	0	2	0	0	0	0	0	0	0	0	0	0
1350 Geneva/1345 Crossman		10			2							
7.Mozart	0	0	0	0	0	0	0	0	0	0	0	0
1277 Borregas TSH Office												
1260 Crossman-Network Appliance-Phillips	0	5	0	0	1	0	0	0	0	0	0	0
1220 N. Mathilda-Juniper Networks		4			1							
1302 N. Mathilda-Menlo Equities		5			1							
10. Yahoo	0	16	0	0	3	0	0	0	0	0	0	0
9. Ariba	0	29	0	0	3	0	0	0	0	0	0	0
3. Town Center Mall	0	0	0	0	0	0	0	0	0	0	0	0
4. Olson Site	0	0	0	0	0	0	0	0	0	0	0	0
11. Synopsis	0	4	0	0	1	0	0	0	0	0	0	0
12. Menlo Equities	0	6	0	0	1	0	0	0	0	0	0	0
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	0	0	0
Peery's Chubby's	0	29	0	0	11	0	0	0	0	0	0	0
Fairchild Veritas	0	3	0	0	0	0	0	0	0	0	0	0
20. 575 Middlefield	0	1	0	0	0	0	0	0	0	0	0	0
21. 441 Logue	0	9	0	0	2	0	0	0	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	0	9	0	0	3	0	0	0	0	0	0	0
24. 500 Ferguson	0	13	0	0	3	0	0	0	0	0	0	0
313 Fairchild		4			1							
615 National												
425 National												
1200 Crittenden							16			80		
1950 Charleston Phase II							5			27		
400 Castro	0	2	20	0	0	1	3	20	0	6	6	0
401 Castro	2				2		9	10				
861 W. Dana	2						8	8		2		
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	4	186	20	0	39	3	12	49	18	6	115	0

Approved Developments - Trips at Study Intersections

Development	(1) Moffett Blvd./Central Expressway											
	AM			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed	6	18			135		27	45		3		
1116 Mathilda	1	1			10		2	3		0		
771 N. Mathilda	1	0			2		0	4		2		
375 N. Pastoria												
13. Sandy Plaza	0	0	0	0	3	0	0	0	0	0	0	0
1350 Geneva/1345 Crossman	2	4			36		7	12		1		
7.Mozart	0	5	0	0	33	0	0	0	0	0	0	0
1277 Borregas TSH Office												
1260 Crossman-Network Appliance-Phillips	1	1	0	0	9	0	0	0	6	0	0	0
1220 N. Mathilda-Juniper Networks	1	2			14		3	5		0		
1302 N. Mathilda-Menlo Equities	1	2			16		3	6		0		
10. Yahoo	0	4	0	0	26	0	0	0	0	0	0	0
9. Ariba	0	3	0	0	22	0	0	0	0	0	0	0
3. Town Center Mall	0	0	0	0	0	0	0	0	0	0	0	0
4. Olson Site	0	0	0	0	0	0	0	0	0	0	0	0
11. Synopsis	0	1	0	0	6	0	0	0	0	0	0	0
12. Menlo Equities	0	1	0	0	11	0	0	0	0	0	0	0
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	0	0	0
Peery's Chubby's	0	0	0	17	0	0	0	17	0	0	5	5
Fairchild Veritas												
20. 575 Middlefield	0	0	0	2	0	0	0	0	0	0	0	0
21. 441 Logue	0	0	0	1	0	0	0	0	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	0	0	0	15	0	0	0	0	0	0	0	2
24. 500 Ferguson	0	2	0	0	17	0	0	0	0	0	0	0
313 Fairchild	1	0	0	2	2		5	5		0	0	0
615 National												
425 National												
1200 Crittenden		59			8							
1950 Charleston Phase II		19			3							
400 Castro	22				25		4	11	3		69	
401 Castro												
861 W. Dana												
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	36	122	0	37	353	25	4	75	89	0	80	7

Intersection: (1) Moffett Blvd./Central Expressway

Development	(1) Moffett Blvd./Central Expressway											
	PM			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed	20	140			25		5	8		20		
1116 Mathilda	3	9			2		0	1		2		
771 N. Mathilda												
375 N. Pastoria	4	1			1		0	2		1		
13. Sandy Plaza	0	3	0	0	1	0	0	0	0	0	0	0
1350 Geneva/1345 Crossman	11	32			7		1	2		6		
7.Mozart	0	30	0	0	7	0	0	0	0	0	0	0
1277 Borregas TSH Office												
1260 Crossman-Network Appliance-Phillips	5	8	0	0	2	0	0	0	1	0	0	0
1220 N. Mathilda-Juniper Networks	4	13			3		1	1		2		
1302 N. Mathilda-Menlo Equities	5	15			3		0	1		2		
10. Yahoo	0	24	0	0	5	0	0	0	0	0	0	0
9. Ariba	0	20	0	0	4	0	0	0	0	0	0	0
3. Town Center Mall	0	0	0	0	0	0	0	0	0	0	0	0
4. Olson Site	0	0	0	0	0	0	0	0	0	0	0	0
11. Synopsis	0	5	0	0	1	0	0	0	0	0	0	0
12. Menlo Equities	0	9	0	0	2	0	0	0	0	0	0	0
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	0	0	0
Peery's Chubby's	0	0	0	6	0	0	0	5	0	0	15	15
Fairchild Veritas												
20. 575 Middlefield	0	0	0	0	0	0	0	0	0	0	0	2
21. 441 Logue	0	0	0	0	0	0	0	0	0	0	0	1
22-23. 545 Whisman, 441-465 Whisman	0	0	0	3	0	0	0	0	0	0	0	13
24. 500 Ferguson	0	15	0	0	3	0	0	0	0	0	0	0
313 Fairchild	5	2	0	0	1		1	1		4		2
615 National												
425 National												
1200 Crittenden		11			53							
1950 Charleston Phase II		4			18							
400 Castro	8				8		35	72	23		22	
401 Castro												
861 W. Dana												
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	65	341	0	9	138	8	35	85	40	0	74	33

Approved Developments - Trips at Study Intersections

Intersection: (2)Moffett Blvd./Middlefield

Peak Hour: AM

Development	Northbound			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed	3	6			40				27			
1116 Mathilda	0	1			3				2			
771 N. Mathilda												
375 N. Pastoria	0				2							
13. Sandy Plaza	0	0	0	0	2	0	0	0	0	0	0	0
1350 Geneva/1345 Crossman	1	1			11				7			
7.Mozart	0	0	0	0	0	0	0	0	0	0	0	0
1277 Borregas TSH Office												
1260 Crossman-Network Appliance-Phillips	0	1	0	0	6	0	0	0	0	0	0	0
1220 N. Mathilda-Juniper Networks	0	1			4				3			
1302 N. Mathilda-Menlo Equities	0	1			5				3			
10. Yahoo	0	2	0	0	17	0	0	0	0	0	0	0
9. Ariba	0	2	0	0	15	0	0	0	0	0	0	0
3. Town Center Mall	0	0	0	0	0	0	0	0	0	0	0	0
4. Olson Site	0	0	0	0	0	0	0	0	0	0	0	0
11. Synopsis	0	1	0	0	4	0	0	0	0	0	0	0
12. Menlo Equities	0	1	0	0	7	0	0	0	0	0	0	0
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	0	0	0
Peery's Chubby's	10	10	0	0	33	0	0	0	34	0	0	0
Fairchild Veritas												
20. 575 Middlefield	0	1	0	0	2	0	0	0	2	0	0	0
21. 441 Logue	0	0	0	0	1	0	0	0	1	0	0	0
22-23. 545 Whisman, 441-465 Whisman	2	1	0	0	10	0	0	0	15	0	0	0
24. 500 Ferguson	0	2	0	0	14	0	0	0	0	0	0	0
313 Fairchild	0	1			4				7			
615 National												
425 National												
1200 Crittenden												
1950 Charleston Phase II												
400 Castro		24				21		3	4	4		24
401 Castro												
861 W. Dana												
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	40	32	0	0	180	21	3	4	105	0	24	0

Intersection: (2)Moffett Blvd./Middlefield

Peak Hour: PM

Development	Northbound			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed	20	40			7				5			
1116 Mathilda	2	3			1				0			
771 N. Mathilda												
375 N. Pastoria	1				1							
13. Sandy Plaza	0	2	0	0	0	0	0	0	0	0	0	0
1350 Geneva/1345 Crossman	6	10			2				1			
7.Mozart	0	0	0	0	0	0	0	0	0	0	0	0
1277 Borregas TSH Office												
1260 Crossman-Network Appliance-Phillips	0	5	0	0	1	0	0	0	0	0	0	0
1220 N. Mathilda-Juniper Networks	2	4			1				1			
1302 N. Mathilda-Menlo Equities	2	5			1				0			
10. Yahoo	0	16	0	0	3	0	0	0	0	0	0	0
9. Ariba	0	29	0	0	3	0	0	0	0	0	0	0
3. Town Center Mall	0	0	0	0	0	0	0	0	0	0	0	0
4. Olson Site	0	0	0	0	0	0	0	0	0	0	0	0
11. Synopsis	0	4	0	0	1	0	0	0	0	0	0	0
12. Menlo Equities	0	6	0	0	1	0	0	0	0	0	0	0
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	0	0	0
Peery's Chubby's	30	29	0	0	11	0	0	0	11	0	0	0
Fairchild Veritas												
20. 575 Middlefield	2	3	0	0	0	0	0	0	1	0	0	0
21. 441 Logue	1	1	0	0	0	0	0	0	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	13	9	0	0	2	0	0	0	3	0	0	0
24. 500 Ferguson	0	13	0	0	3	0	0	0	0	0	0	0
313 Fairchild	2	4			1				1			
615 National												
425 National												
1200 Crittenden												
1950 Charleston Phase II												
400 Castro		8				8		15	25	25		8
401 Castro												
861 W. Dana												
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	88	184	0	0	39	8	15	25	48	0	8	0

Approved Developments - Trips at Study Intersections

Intersection: (3)Moffett Blvd./SR 85 NB Ramp

Peak Hour: AM

Development	Northbound			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed												
1116 Mathilda												
771 N. Pastoria												
375 N. Pastoria												
13. Sandy Plaza	0	0	0	0	0	0	0	0	0	0	0	0
1350 Geneva/1345 Crossman												
7.Mozart	0	0	0	0	0	0	0	0	0	0	0	0
1277 Borregas TSH Office												
1260 Crossman-Network Appliance-Phillips	0	0	0	0	0	0	0	0	0	0	0	0
1220 N. Mathilda-Juniper Networks												
1302 N. Mathilda-Menlo Equities												
10. Yahoo	0	0	0	0	0	0	0	0	0	0	0	0
9. Ariba	0	0	0	0	0	0	0	0	0	0	0	0
3. Town Center Mall	0	0	0	0	0	0	0	0	0	0	0	0
4. Olson Site	0	0	0	0	0	0	0	0	0	0	0	0
11. Synopsis	0	0	0	0	0	0	0	0	0	0	0	0
12. Menlo Equities	0	0	0	0	0	0	0	0	0	0	0	0
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	0	0	0
Peery's Chubby's												
Fairchild Veritas												
20. 575 Middlefield	0	0	0	0	0	0	0	0	0	0	0	0
21. 441 Logue	0	0	0	0	0	0	0	0	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	0	0	0	0	0	0	0	0	0	0	0	0
24. 500 Ferguson	0	0	0	0	0	0	0	0	0	0	0	0
313 Fairchild												
615 National												
425 National												
1200 Crittenden												
1950 Charleston Phase II												
400 Castro							4			24		
401 Castro												
861 W. Dana												
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	0	0	0	0	0	0	0	4	0	0	24	0

Intersection: (3)Moffett Blvd./SR 85 NB Ramp

Peak Hour: PM

Development	Northbound			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed												
1116 Mathilda												
771 N. Mathilda												
375 N. Pastoria												
13. Sandy Plaza	0	0	0	0	0	0	0	0	0	0	0	0
1350 Geneva/1345 Crossman												
7.Mozart	0	0	0	0	0	0	0	0	0	0	0	0
1277 Borregas TSH Office												
1260 Crossman-Network Appliance-Phillips	0	0	0	0	0	0	0	0	0	0	0	0
1220 N. Mathilda-Juniper Networks												
1302 N. Mathilda-Menlo Equities												
10. Yahoo	0	0	0	0	0	0	0	0	0	0	0	0
9. Ariba	0	0	0	0	0	0	0	0	0	0	0	0
3. Town Center Mall	0	0	0	0	0	0	0	0	0	0	0	0
4. Olson Site	0	0	0	0	0	0	0	0	0	0	0	0
11. Synopsis	0	0	0	0	0	0	0	0	0	0	0	0
12. Menlo Equities	0	0	0	0	0	0	0	0	0	0	0	0
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	0	0	0
Peery's Chubby's												
Fairchild Veritas												
20. 575 Middlefield	0	0	0	0	0	0	0	0	0	0	0	0
21. 441 Logue	0	0	0	0	0	0	0	0	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	0	0	0	0	0	0	0	0	0	0	0	0
24. 500 Ferguson	0	0	0	0	0	0	0	0	0	0	0	0
313 Fairchild												
615 National												
425 National												
1200 Crittenden												
1950 Charleston Phase II												
400 Castro							25			8		
401 Castro												
861 W. Dana												
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	0	0	0	0	0	0	0	25	0	0	8	0

Approved Developments - Trips at Study Intersections

Intersection: (4)Moffett Blvd./101 SB Ramps

Peak Hour: AM

Development	Northbound			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed												
1116 Mathilda												
771 N. Pastoria												
13. Sandy Plaza	0	0	0	0	0	0	0	0	0	0	0	0
1350 Geneva/1345 Crossman												
7.Mozart	0	0	0	0	0	0	0	0	0	0	0	0
1277 Borregas TSH Office												
1260 Crossman-Network Appliance-Phillips	0	0	0	0	0	0	0	0	0	0	0	0
1220 N. Mathilda-Juniper Networks												
1302 N. Mathilda-Menlo Equities												
10. Yahoo	0	0	0	0	0	0	0	0	0	0	0	0
9. Ariba	0	0	0	0	0	0	0	0	0	0	0	0
3. Town Center Mall	0	0	0	0	0	0	0	0	0	0	0	0
4. Olson Site	0	0	0	0	0	0	0	0	0	0	0	0
11. Synopsis	0	0	0	0	0	0	0	0	0	0	0	0
12. Menlo Equities	0	0	0	0	0	0	0	0	0	0	0	0
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	0	0	0
Peery's Chubby's												
Fairchild Veritas												
20. 575 Middlefield	0	0	0	0	0	0	0	0	0	0	0	0
21. 441 Logue	0	0	0	0	0	0	0	0	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	0	0	49	0	0	0	0	0	0	0	0	0
24. 500 Ferguson	0	0	0	0	0	0	0	0	0	0	0	0
313 Fairchild												
615 National												
425 National												
1200 Crittenden												
1950 Charleston Phase II												
400 Castro										4		24
401 Castro												
861 W. Dana												
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	0	0	49	0	0	0	0	0	4	0	24	0

Intersection: (4)Moffett Blvd./101 SB Ramps

Peak Hour: PM

Development	Northbound			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed												
1116 Mathilda												
771 N. Mathilda												
375 N. Pastoria												
13. Sandy Plaza	0	0	0	0	0	0	0	0	0	0	0	0
1350 Geneva/1345 Crossman												
7.Mozart	0	0	0	0	0	0	0	0	0	0	0	0
1277 Borregas TSH Office												
1260 Crossman-Network Appliance-Phillips	0	0	0	0	0	0	0	0	0	0	0	0
1220 N. Mathilda-Juniper Networks												
1302 N. Mathilda-Menlo Equities												
10. Yahoo	0	0	0	0	0	0	0	0	0	0	0	0
9. Ariba	0	0	0	0	0	0	0	0	0	0	0	0
3. Town Center Mall	0	0	0	0	0	0	0	0	0	0	0	0
4. Olson Site	0	0	0	0	0	0	0	0	0	0	0	0
11. Synopsis	0	0	0	0	0	0	0	0	0	0	0	0
12. Menlo Equities	0	0	0	0	0	0	0	0	0	0	0	0
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	0	0	0
Peery's Chubby's												
Fairchild Veritas												
20. 575 Middlefield	0	0	0	0	0	0	0	0	0	0	0	0
21. 441 Logue	0	0	0	0	0	0	0	0	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	0	0	9	0	0	0	0	0	0	0	0	0
24. 500 Ferguson	0	0	0	0	0	0	0	0	0	0	0	0
313 Fairchild												
615 National												
425 National												
1200 Crittenden												
1950 Charleston Phase II												
400 Castro										25		8
401 Castro												
861 W. Dana												
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	0	0	9	0	0	0	0	0	25	0	8	0

Approved Developments - Trips at Study Intersections

Intersection: (5)Moffett Blvd./101 NB Ramps

Peak Hour: AM

Development	Northbound			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed												
1116 Mathilda												
771 N. Pastoria												
13. Sandy Plaza	0	0	0	0	0	0	0	0	0	0	0	0
1350 Geneva/1345 Crossman												
7.Mozart	0	0	0	0	0	0	0	0	0	0	0	0
1277 Borregas TSH Office												
1260 Crossman-Network Appliance-Phillips	0	0	0	0	0	0	0	0	0	0	0	0
1220 N. Mathilda-Juniper Networks												
1302 N. Mathilda-Menlo Equities												
10. Yahoo	0	0	0	0	0	0	0	0	0	0	0	0
9. Ariba	0	0	0	0	0	0	0	0	0	0	0	0
3. Town Center Mall	0	0	0	0	0	0	0	0	0	0	0	0
4. Olson Site	0	0	0	0	0	0	0	0	0	0	0	0
11. Synopsis	0	0	0	0	0	0	0	0	0	0	0	0
12. Menlo Equities	0	0	0	0	0	0	0	0	0	0	0	0
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	0	0	0
Peery's Chubby's												
Fairchild Veritas												
20. 575 Middlefield	0	0	0	0	0	0	0	0	0	0	0	0
21. 441 Logue	0	0	0	0	0	0	0	0	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	0	0	0	0	0	0	0	0	7	0	0	0
24. 500 Ferguson	0	0	0	0	0	0	0	0	0	0	0	0
313 Fairchild												
615 National												
425 National												
1200 Crittenden												
1950 Charleston Phase II												
400 Castro				24								
401 Castro												
861 W. Dana												
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	24	0	0	0	0	0	0	0	0	7	0	0

Intersection: (5)Moffett Blvd./101 NB Ramps

Peak Hour: PM

Development	Northbound			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed												
1116 Mathilda												
771 N. Mathilda												
375 N. Pastoria												
13. Sandy Plaza	0	0	0	0	0	0	0	0	0	0	0	0
1350 Geneva/1345 Crossman												
7.Mozart	0	0	0	0	0	0	0	0	0	0	0	0
1277 Borregas TSH Office												
1260 Crossman-Network Appliance-Phillips	0	0	0	0	0	0	0	0	0	0	0	0
1220 N. Mathilda-Juniper Networks												
1302 N. Mathilda-Menlo Equities												
10. Yahoo	0	0	0	0	0	0	0	0	0	0	0	0
9. Ariba	0	0	0	0	0	0	0	0	0	0	0	0
3. Town Center Mall	0	0	0	0	0	0	0	0	0	0	0	0
4. Olson Site	0	0	0	0	0	0	0	0	0	0	0	0
11. Synopsis	0	0	0	0	0	0	0	0	0	0	0	0
12. Menlo Equities	0	0	0	0	0	0	0	0	0	0	0	0
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	0	0	0
Peery's Chubby's												
Fairchild Veritas												
20. 575 Middlefield	0	0	0	0	0	0	0	0	0	0	0	0
21. 441 Logue	0	0	0	0	0	0	0	0	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	0	0	0	0	0	0	0	0	43	0	0	0
24. 500 Ferguson	0	0	0	0	0	0	0	0	0	0	0	0
313 Fairchild												
615 National												
425 National												
1200 Crittenden												
1950 Charleston Phase II												
400 Castro				8								
401 Castro												
861 W. Dana												
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	8	0	0	0	0	0	0	0	43	0	0	0

Approved Developments - Trips at Study Intersections

Intersection: (64)Whisman/Middlefield

Peak Hour:

Development	Northbound			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed		9			67							
1116 Mathilda		1			5							
771 N. Mathilda												
375 N. Pastoria		0		2								
13. Sandy Plaza	0	0	0	0	2	0	0	0	0	0	0	0
1350 Geneva/1345 Crossman		2			18							
7.Mozart	0	0	0	0	0	0	0	0	0	0	0	0
1277 Borregas TSH Office												
1260 Crossman-Network Appliance-Phillips	0	1	0	0	6	0	0	0	0	0	0	0
1220 N. Mathilda-Juniper Networks		1			7							
1302 N. Mathilda-Menlo Equities		1			8							
10. Yahoo	0	2	0	0	17	0	0	0	0	0	0	0
9. Ariba	0	2	0	0	15	0	0	0	0	0	0	0
3. Town Center Mall	0	0	0	0	0	0	0	0	0	0	0	0
4. Olson Site	0	0	0	0	0	0	0	0	0	0	0	0
11. Synopsis	0	1	0	0	4	0	0	0	0	0	0	0
12. Menlo Equities	0	1	0	0	7	0	0	0	0	0	0	0
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	0	0	0
Peery's Chubby's	9	4	7	15	19	0	0	40	47	0	0	3
Fairchild Veritas												
20. 575 Middlefield	0	1	0	0	2	0	0	0	0	0	0	0
21. 441 Logue	0	0	0	0	2	0	0	0	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	0	0	147	15	0	0	0	0	0	20	0	3
24. 500 Ferguson	0	2	0	0	14	0	0	0	0	0	0	0
313 Fairchild				10	11	0		51		1	7	1
615 National												
425 National												
1200 Crittenden												
1950 Charleston Phase II												
400 Castro		24			4							
401 Castro												
861 W. Dana												
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	9	52	164	41	199	0	0	91	47	21	7	7

Intersection: (64)Whisman/Middlefield

Peak Hour:

Development	Northbound			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed		60			12							
1116 Mathilda		5			1							
771 N. Mathilda												
375 N. Pastoria		1			1							
13. Sandy Plaza	0	2	0	0	0	0	0	0	0	0	0	0
1350 Geneva/1345 Crossman		16			3							
7.Mozart	0	0	0	0	0	0	0	0	0	0	0	0
1277 Borregas TSH Office												
1260 Crossman-Network Appliance-Phillips	0	5	0	0	1	0	0	0	0	0	0	0
1220 N. Mathilda-Juniper Networks		6			2							
1302 N. Mathilda-Menlo Equities		7			1							
10. Yahoo	0	16	0	0	3	0	0	0	0	0	0	0
9. Ariba	0	29	0	0	3	0	0	0	0	0	0	0
3. Town Center Mall	0	0	0	0	0	0	0	0	0	0	0	0
4. Olson Site	0	0	0	0	0	0	0	0	0	0	0	0
11. Synopsis	0	4	0	0	1	0	0	0	0	0	0	0
12. Menlo Equities	0	6	0	0	1	0	0	0	0	0	0	0
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	0	0	0
Peery's Chubby's	41	16	1	2	4	0	0	6	11	0	0	13
Fairchild Veritas												
20. 575 Middlefield	0	5	0	0	1	0	0	0	0	0	0	0
21. 441 Logue	0	2	0	0	0	0	0	0	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	0	0	27	3	0	0	0	0	0	130	0	22
24. 500 Ferguson	0	13	0	0	3	0	0	0	0	0	0	0
313 Fairchild				2	2			10		9	48	6
615 National												
425 National												
1200 Crittenden												
1950 Charleston Phase II				8		25						
400 Castro												
401 Castro												
861 W. Dana												
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	41	201	30	7	62	0	0	16	11	139	48	41

Approved Developments - Trips at Study Intersections

Intersection: (7)Ellis/Middlefield

Peak Hour: AM

Development	Northbound			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed		9			67							
1116 Mathilda		1			5							
771 N. Mathilda												
375 N. Pastoria		0		2								
13. Sandy Plaza	0	0	3	0	2	0	0	0	0	21	0	0
1350 Geneva/1345 Crossman		2			18							
7.Mozart	0	0	0	0	0	0	0	0	0	0	0	0
1277 Borregas TSH Office												
1260 Crossman-Network Appliance-Phillips	0	1	4	0	6	0	0	0	0	31	0	0
1220 N. Mathilda-Juniper Networks		1			7							
1302 N. Mathilda-Menlo Equities		1			8							
10. Yahoo	0	2	0	0	17	0	0	0	0	0	0	0
9. Ariba	0	0	73	15	0	0	0	0	0	10	0	2
3. Town Center Mall	0	0	0	0	0	0	0	0	0	0	0	0
4. Olson Site	0	0	0	0	0	0	0	0	0	0	0	0
11. Synopsis	0	1	0	0	4	0	0	0	0	38	0	0
12. Menlo Equities	0	1	0	0	7	0	0	0	0	0	0	0
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	0	0	0
Peery's Chubby's	0	7	126	66	1	0	0	0	0	24	0	13
Fairchild Veritas												
20. 575 Middlefield	0	1	3	0	4	0	0	0	0	22	0	0
21. 441 Logue	0	0	0	0	2	0	0	0	0	2	0	0
22-23. 545 Whisman, 441-465 Whisman	0	147	0	0	20	0	0	0	0	0	0	0
24. 500 Ferguson	0	2	5	0	14	0	0	0	0	34	0	0
313 Fairchild		10	10		1					1		
615 National												
425 National												
1200 Crittenden												
1950 Charleston Phase II												
400 Castro			24			4						
401 Castro												
861 W. Dana												
Bryan/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	0	210	224	81	189	0	0	0	0	183	0	15

Intersection: (7)Ellis/Middlefield

Peak Hour: PM

Development	Northbound			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed		60			12							
1116 Mathilda		5			1							
771 N. Mathilda												
375 N. Pastoria		1			1							
13. Sandy Plaza	0	2	19	0	0	0	0	0	0	4	0	0
1350 Geneva/1345 Crossman		16			3							
7.Mozart	0	0	0	0	0	0	0	0	0	0	0	0
1277 Borregas TSH Office												
1260 Crossman-Network Appliance-Phillips	0	5	27	0	1	0	0	0	0	6	0	0
1220 N. Mathilda-Juniper Networks		6			2							
1302 N. Mathilda-Menlo Equities		7			1							
10. Yahoo	0	16	0	0	3	0	0	0	0	0	0	0
9. Ariba	0	0	14	3	0	0	0	0	0	143	0	29
3. Town Center Mall	0	0	0	0	0	0	0	0	0	0	0	0
4. Olson Site	0	0	0	0	0	0	0	0	0	0	0	0
11. Synopsis	0	4	0	0	1	0	0	0	0	7	0	0
12. Menlo Equities	0	6	0	0	1	0	0	0	0	0	0	0
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	0	0	0
Peery's Chubby's	0	1	29	16	6	0	0	0	0	110	0	58
Fairchild Veritas												
20. 575 Middlefield	0	5	19	0	1	0	0	0	0	4	0	0
21. 441 Logue	0	3	3	0	0	0	0	0	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	0	27	0	0	130	0	0	0	0	0	0	0
24. 500 Ferguson	0	13	30	0	3	0	0	0	0	6	0	0
313 Fairchild		2	2		9					9		
615 National												
425 National												
1200 Crittenden												
1950 Charleston Phase II												
400 Castro			8			25						
401 Castro												
861 W. Dana												
Bryan/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	0	187	143	19	200	0	0	0	0	289	0	87

Approved Developments - Trips at Study Intersections

Intersection: (8)Ellis/101 SB Ramps

Peak Hour: AM

Development	Northbound			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed												
1116 Mathilda												
771 N. Pastoria												
375 N. Pastoria												
13. Sandy Plaza	0	0	0	0	0	21	0	3	0	0	0	0
1350 Geneva/1345 Crossman												
7.Mozart	0	0	0	0	0	0	0	0	0	0	0	0
1277 Borregas TSH Office												
1260 Crossman-Network Appliance-Phillips	0	0	0	0	0	31	0	4	0	0	0	0
1220 N. Mathilda-Juniper Networks												
1302 N. Mathilda-Menlo Equities												
10. Yahoo	0	0	0	0	0	0	0	0	0	0	0	0
9. Ariba	0	0	0	146	0	0	0	88	0	0	0	12
3. Town Center Mall	0	0	0	0	0	0	0	0	0	0	0	0
4. Olson Site	0	0	0	0	0	0	0	0	0	0	0	0
11. Synopsis	0	0	0	0	0	38	0	5	0	0	0	0
12. Menlo Equities	0	0	0	0	0	0	0	0	0	0	0	0
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	0	0	0
Peery's Chubby's	0	0	0	0	0	104	0	20	28	0	144	0
Fairchild Veritas												
20. 575 Middlefield	0	0	0	0	0	22	0	3	0	0	0	0
21. 441 Logue	0	0	0	0	0	3	0	0	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	0	0	0	0	0	49	0	7	0	0	0	0
24. 500 Ferguson	0	0	0	0	0	34	0	5	0	0	0	0
313 Fairchild							34		5	12		84
615 National												
425 National												
1200 Crittenden												
1950 Charleston Phase II												
400 Castro												
401 Castro												
861 W. Dana												
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	0	0	0	146	0	336	0	140	40	0	240	0

Intersection: (8)Ellis/101 SB Ramps

Peak Hour: PM

Development	Northbound			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed												
1116 Mathilda												
771 N. Mathilda												
375 N. Pastoria												
13. Sandy Plaza	0	0	0	0	0	4	0	19	0	0	0	0
1350 Geneva/1345 Crossman												
7.Mozart	0	0	0	0	0	0	0	0	0	0	0	0
1277 Borregas TSH Office												
1260 Crossman-Network Appliance-Phillips	0	0	0	0	0	6	0	27	0	0	0	0
1220 N. Mathilda-Juniper Networks												
1302 N. Mathilda-Menlo Equities												
10. Yahoo	0	0	0	0	0	0	0	0	0	0	0	0
9. Ariba	0	0	0	28	0	0	0	17	0	0	0	172
3. Town Center Mall	0	0	0	0	0	0	0	0	0	0	0	0
4. Olson Site	0	0	0	0	0	0	0	0	0	0	0	0
11. Synopsis	0	0	0	0	0	7	0	35	0	0	0	0
12. Menlo Equities	0	0	0	0	0	0	0	0	0	0	0	0
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	0	0	0
Peery's Chubby's	0	0	0	0	0	23	0	93	125	0	32	0
Fairchild Veritas												
20. 575 Middlefield	0	0	0	0	0	4	0	19	0	0	0	0
21. 441 Logue	0	0	0	0	0	1	0	6	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	0	0	0	0	0	9	0	43	0	0	0	0
24. 500 Ferguson	0	0	0	0	0	6	0	30	0	0	0	0
313 Fairchild							6	32	79		16	
615 National												
425 National												
1200 Crittenden												
1950 Charleston Phase II												
400 Castro												
401 Castro												
861 W. Dana												
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	0	0	0	28	0	66	0	321	204	0	220	0

Approved Developments - Trips at Study Intersections

Intersection: (9)Ellis/101 NB Ramps

Peak Hour: AM

Development	Northbound			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed												
1116 Mathilda												
771 N. Pastoria												
375 N. Pastoria												
13. Sandy Plaza	0	0	0	0	0	0	3	0	0	0	0	0
1350 Geneva/1345 Crossman												
7.Mozart	0	0	0	0	0	0	0	0	0	0	0	0
1277 Borregas TSH Office												
1260 Crossman-Network Appliance-Phillips	0	0	0	0	0	0	4	0	0	0	0	0
1220 N. Mathilda-Juniper Networks												
1302 N. Mathilda-Menlo Equities												
10. Yahoo	0	0	0	0	0	0	0	0	0	0	0	0
9. Ariba	0	0	0	0	0	0	0	234	0	0	12	20
3. Town Center Mall	0	0	0	0	0	0	0	0	0	0	0	0
4. Olson Site	0	0	0	0	0	0	0	0	0	0	0	0
11. Synopsis	0	0	0	0	0	0	5	0	0	0	0	0
12. Menlo Equities	0	0	0	0	0	0	0	0	0	0	0	0
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	0	0	0
Peery's Chubby's	143	0	0	0	0	0	20	0	0	0	0	0
Fairchild Veritas												
20. 575 Middlefield	0	0	0	0	0	0	3	0	0	0	0	0
21. 441 Logue	0	0	0	0	0	0	0	0	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	221	0	0	0	0	0	7	0	0	0	0	0
24. 500 Ferguson	0	0	0	0	0	0	5	0	0	0	0	0
313 Fairchild							5					
615 National												
425 National												
1200 Crittenden												
1950 Charleston Phase II												
400 Castro												
401 Castro												
861 W. Dana												
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	448	0	0	0	0	0	52	234	0	0	12	20

Intersection: (9)Ellis/101 NB Ramps

Peak Hour: PM

Development	Northbound			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed												
1116 Mathilda												
771 N. Mathilda												
375 N. Pastoria												
13. Sandy Plaza	0	0	0	0	0	0	19	0	0	0	0	0
1350 Geneva/1345 Crossman												
7.Mozart	0	0	0	0	0	0	0	0	0	0	0	0
1277 Borregas TSH Office												
1260 Crossman-Network Appliance-Phillips	0	0	0	0	0	0	27	0	0	0	0	0
1220 N. Mathilda-Juniper Networks												
1302 N. Mathilda-Menlo Equities												
10. Yahoo	0	0	0	0	0	0	0	0	0	0	0	0
9. Ariba	0	0	0	0	0	0	0	45	0	0	172	43
3. Town Center Mall	0	0	0	0	0	0	0	0	0	0	0	0
4. Olson Site	0	0	0	0	0	0	0	0	0	0	0	0
11. Synopsis	0	0	0	0	0	0	35	0	0	0	0	0
12. Menlo Equities	0	0	0	0	0	0	0	0	0	0	0	0
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	0	0	0
Peery's Chubby's	31	0	0	0	0	0	91	0	0	0	0	0
Fairchild Veritas												
20. 575 Middlefield	0	0	0	0	0	0	19	0	0	0	0	0
21. 441 Logue	0	0	0	0	0	0	6	0	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	40	0	0	0	0	0	43	0	0	0	0	0
24. 500 Ferguson	0	0	0	0	0	0	30	0	0	0	0	0
313 Fairchild							32					
615 National												
425 National												
1200 Crittenden												
1950 Charleston Phase II												
400 Castro												
401 Castro												
861 W. Dana												
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	87	0	0	0	0	0	302	45	0	0	172	43

Approved Developments - Trips at Study Intersections

Intersection: (10) Ellis/Manila

Peak Hour: AM

Development	Northbound			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed												
1116 Mathilda												
771 N. Pastoria												
375 N. Pastoria												
13. Sandy Plaza	0	0	0	0	0	0	0	0	0	0	0	0
1350 Geneva/1345 Crossman												
7.Mozart	0	0	0	0	0	0	0	0	0	0	0	0
1277 Borregas TSH Office												
1260 Crossman-Network Appliance-Phillips	0	0	0	0	0	0	0	0	0	0	0	0
1220 N. Mathilda-Juniper Networks												
1302 N. Mathilda-Menlo Equities												
10. Yahoo	0	0	0	0	0	0	0	0	0	0	0	0
9. Ariba	32	0	0	0	0	0	0	0	234	0	0	0
3. Town Center Mall	0	0	0	0	0	0	0	0	0	0	0	0
4. Olson Site	0	0	0	0	0	0	0	0	0	0	0	0
11. Synopsis	0	0	0	0	0	0	0	0	0	0	0	0
12. Menlo Equities	0	0	0	0	0	0	0	0	0	0	0	0
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	0	0	0
Peery's Chubby's												
Fairchild Veritas												
20. 575 Middlefield	0	0	0	0	0	0	0	0	0	0	0	0
21. 441 Logue	0	0	0	0	0	0	0	0	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	0	0	0	0	0	0	0	0	0	0	0	0
24. 500 Ferguson	0	0	0	0	0	0	0	0	0	0	0	0
313 Fairchild												
615 National												
425 National												
1200 Crittenden												
1950 Charleston Phase II												
400 Castro												
401 Castro												
861 W. Dana												
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	32	0	0	0	0	0	0	0	234	0	0	0

Intersection: (10) Ellis/Manila

Peak Hour: PM

Development	Northbound			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed												
1116 Mathilda												
771 N. Mathilda												
375 N. Pastoria												
13. Sandy Plaza	0	0	0	0	0	0	0	0	0	0	0	0
1350 Geneva/1345 Crossman												
7.Mozart	0	0	0	0	0	0	0	0	0	0	0	0
1277 Borregas TSH Office												
1260 Crossman-Network Appliance-Phillips	0	0	0	0	0	0	0	0	0	0	0	0
1220 N. Mathilda-Juniper Networks												
1302 N. Mathilda-Menlo Equities												
10. Yahoo	0	0	0	0	0	0	0	0	0	0	0	0
9. Ariba	215	0	0	0	0	0	0	0	45	0	0	0
3. Town Center Mall	0	0	0	0	0	0	0	0	0	0	0	0
4. Olson Site	0	0	0	0	0	0	0	0	0	0	0	0
11. Synopsis	0	0	0	0	0	0	0	0	0	0	0	0
12. Menlo Equities	0	0	0	0	0	0	0	0	0	0	0	0
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	0	0	0
Peery's Chubby's	0	0	0	0	0	0	0	0	0	0	0	0
Fairchild Veritas												
20. 575 Middlefield	0	0	0	0	0	0	0	0	0	0	0	0
21. 441 Logue	0	0	0	0	0	0	0	0	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	0	0	0	0	0	0	0	0	0	0	0	0
24. 500 Ferguson	0	0	0	0	0	0	0	0	0	0	0	0
313 Fairchild												
615 National												
425 National												
1200 Crittenden												
1950 Charleston Phase II												
400 Castro												
401 Castro												
861 W. Dana												
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	215	0	0	0	0	0	0	0	45	0	0	0

Approved Developments - Trips at Study Intersections

Intersection: (11) SR 237 WB Ramps/Middlefield

Peak Hour:

Development	Northbound			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed					67							9
1116 Mathilda					5							1
771 N. Mathilda					2						3	0
375 N. Pastoria												
13. Sandy Plaza	0	0	0	0	23	0	0	0	0	0	3	3
1350 Geneva/1345 Crossman					18							2
7.Mozart	0	0	0	0	0	0	0	0	0	0	0	0
1277 Borregas TSH Office												
1260 Crossman-Network Appliance-Phillips	0	0	0	0	6	0	0	0	0	0	8	5
1220 N. Mathilda-Juniper Networks					7							1
1302 N. Mathilda-Menlo Equities					8							1
10. Yahoo	0	0	0	0	17	0	0	0	0	12	0	2
9. Ariba	0	73	0	0	10	0	0	0	0	0	0	0
3. Town Center Mall	0	0	0	0	0	0	0	0	0	0	0	0
4. Olson Site	0	0	0	0	0	0	0	0	0	0	0	0
11. Synopsis	0	0	0	0	42	0	0	0	0	0	6	6
12. Menlo Equities	0	0	0	0	7	0	0	0	0	0	0	1
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	0	0	0
Peery's Chubby's	0	13	0	0	13	12	0	0	0	0	0	12
Fairchild Veritas												
20. 575 Middlefield	0	33	0	0	6	3	0	0	0	0	0	34
21. 441 Logue	0	4	0	0	0	0	0	0	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	0	147	0	0	20	0	0	0	0	0	0	0
24. 500 Ferguson	0	66	0	0	13	0	0	0	0	0	97	0
313 Fairchild		20			2							
615 National												
425 National												
1200 Crittenden												
1950 Charleston Phase II												
400 Castro							4				24	
401 Castro												
861 W. Dana												
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	0	356	0	0	250	35	0	0	0	12	117	101

Intersection: (11) SR 237 WB Ramps/Middlefield

Peak Hour:

Development	Northbound			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed					12							60
1116 Mathilda					1							5
771 N. Mathilda					1						16	1
375 N. Pastoria												
13. Sandy Plaza	0	0	0	0	4	0	0	0	0	0	22	21
1350 Geneva/1345 Crossman					3							16
7.Mozart	0	0	0	0	0	0	0	0	0	0	0	0
1277 Borregas TSH Office												
1260 Crossman-Network Appliance-Phillips	0	0	0	0	1	0	0	0	0	0	54	32
1220 N. Mathilda-Juniper Networks					2							6
1302 N. Mathilda-Menlo Equities					1							7
10. Yahoo	0	0	0	0	3	0	0	0	0	81	0	16
9. Ariba	0	14	0	0	143	0	0	0	0	0	0	0
3. Town Center Mall	0	0	0	0	0	0	0	0	0	0	0	0
4. Olson Site	0	0	0	0	0	0	0	0	0	0	0	0
11. Synopsis	0	0	0	0	8	0	0	0	0	0	39	40
12. Menlo Equities	0	0	0	0	1	0	0	0	0	0	0	6
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	0	0	0
Peery's Chubby's	0	57	0	0	57	54	0	0	0	0	0	3
Fairchild Veritas												
20. 575 Middlefield	0	16	0	0	38	20	0	0	0	0	0	6
21. 441 Logue	0	2	0	0	3	6	0	0	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	0	27	0	0	0	130	0	0	0	0	0	0
24. 500 Ferguson	0	12	0	0	85	0	0	0	0	0	17	0
313 Fairchild		4			18							
615 National												
425 National												
1200 Crittenden												
1950 Charleston Phase II												
400 Castro							25				8	
401 Castro												
861 W. Dana												
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	0	132	0	0	381	210	0	25	0	81	148	227

Approved Developments - Trips at Study Intersections

Intersection: (12)SR 237 EB Ramps/Middlefield

Peak Hour:

Development	Northbound			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed					67							
1116 Mathilda					5							
771 N. Mathilda												
375 N. Pastoria					2				18			
13. Sandy Plaza	0	0	0	0	23	0	0	24	0	0	0	0
1350 Geneva/1345 Crossman				18								
7.Mozart	0	0	0	0	0	0	0	0	0	0	0	0
1277 Borregas TSH Office												
1260 Crossman-Network Appliance-Phillips	0	0	0	6	0	0	0	61	0	0	0	0
1220 N. Mathilda-Juniper Networks					7							
1302 N. Mathilda-Menlo Equities					8							
10. Yahoo	0	0	86	17	12	0	0	0	0	0	0	0
9. Ariba	0	73	0	0	10	0	0	0	0	0	0	0
3. Town Center Mall	0	0	0	0	0	0	0	0	0	0	0	0
4. Olson Site	0	0	0	0	0	0	0	0	0	0	0	0
11. Synopsis	0	0	0	42	0	0	0	43	0	0	0	0
12. Menlo Equities	0	0	0	7	0	0	0	0	0	0	0	0
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	0	0	0
Peery's Chubby's	0	53	0	2	10	0	61	0	0	0	0	0
Fairchild Veritas												
20. 575 Middlefield	0	10	0	5	1	0	23	0	0	0	0	0
21. 441 Logue	0	1	0	0	0	0	3	0	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	0	0	0	0	0	0	147	0	0	0	0	0
24. 500 Ferguson	0	0	0	13	0	0	66	0	0	0	0	0
313 Fairchild		20			2							
615 National												
425 National												
1200 Crittenden												
1950 Charleston Phase II												
400 Castro				4								
401 Castro												
861 W. Dana												
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	0	157	86	203	58	0	300	146	0	0	0	0

Intersection: (12)SR 237 EB Ramps/Middlefield

Peak Hour:

Development	Northbound			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed					12							
1116 Mathilda					1							
771 N. Mathilda												
375 N. Pastoria					1				11			
13. Sandy Plaza	0	0	0	0	4	0	0	5	0	0	0	0
1350 Geneva/1345 Crossman				3								
7.Mozart	0	0	0	0	0	0	0	0	0	0	0	0
1277 Borregas TSH Office												
1260 Crossman-Network Appliance-Phillips	0	0	0	1	0	0	0	11	0	0	0	0
1220 N. Mathilda-Juniper Networks					2							
1302 N. Mathilda-Menlo Equities					1							
10. Yahoo	0	0	17	3	81	0	0	0	0	0	0	0
9. Ariba	0	14	0	0	143	0	0	0	0	0	0	0
3. Town Center Mall	0	0	0	0	0	0	0	0	0	0	0	0
4. Olson Site	0	0	0	0	0	0	0	0	0	0	0	0
11. Synopsis	0	0	0	8	0	0	0	8	0	0	0	0
12. Menlo Equities	0	0	0	1	0	0	0	0	0	0	0	0
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	0	0	0
Peery's Chubby's	0	11	0	10	46	0	15	0	0	0	0	0
Fairchild Veritas												
20. 575 Middlefield	0	2	0	30	9	0	4	0	0	0	0	0
21. 441 Logue	0	1	0	3	0	0	1	0	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	0	0	0	0	0	0	27	0	0	0	0	0
24. 500 Ferguson	0	0	0	85	0	0	12	0	0	0	0	0
313 Fairchild		4			18							
615 National												
425 National												
1200 Crittenden												
1950 Charleston Phase II												
400 Castro				25								
401 Castro												
861 W. Dana												
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	0	32	17	186	301	0	59	35	0	0	0	0

Approved Developments - Trips at Study Intersections

Intersection: (13) Moffet Park Drive/H Street

Peak Hour:

AM

Development	Northbound			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed												
1116 Mathilda												
771 N. Pastoria												
375 N. Pastoria												
13. Sandy Plaza	0	0	0	0	0	0	0	0	0	0	0	0
1350 Geneva/1345 Crossman												
7.Mozart	0	0	0	0	0	0	0	0	0	0	0	0
1277 Borregas TSH Office												
1260 Crossman-Network Appliance-Phillips	0	0	0	0	0	0	0	0	0	0	0	0
1220 N. Mathilda-Juniper Networks												
1302 N. Mathilda-Menlo Equities												
10. Yahoo	0	0	0	0	0	0	0	0	0	0	0	0
9. Ariba	0	0	0	0	0	0	0	234	0	0	0	32
3. Town Center Mall	0	0	0	0	0	0	0	0	0	0	0	0
4. Olson Site	0	0	0	0	0	0	0	0	0	0	0	0
11. Synopsis	0	0	0	0	0	0	0	0	0	0	0	0
12. Menlo Equities	0	0	0	0	0	0	0	0	0	0	0	0
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	0	0	0
Peery's Chubby's												
Fairchild Veritas												
20. 575 Middlefield	0	0	0	0	0	0	0	0	0	0	0	0
21. 441 Logue	0	0	0	0	0	0	0	0	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	0	0	0	0	0	0	0	0	0	0	0	0
24. 500 Ferguson	0	0	0	0	0	0	0	0	0	0	0	0
313 Fairchild												
615 National												
425 National												
1200 Crittenden												
1950 Charleston Phase II												
400 Castro												
401 Castro												
861 W. Dana												
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	0	0	0	0	0	0	0	234	0	0	32	0

Intersection: (13) Moffet Park Drive/H Street

Peak Hour:

PM

Development	Northbound			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed												
1116 Mathilda												
771 N. Mathilda												
375 N. Pastoria												
13. Sandy Plaza	0	0	0	0	0	0	0	0	0	0	0	0
1350 Geneva/1345 Crossman												
7.Mozart	0	0	0	0	0	0	0	0	0	0	0	0
1277 Borregas TSH Office												
1260 Crossman-Network Appliance-Phillips	0	0	0	0	0	0	0	0	0	0	0	0
1220 N. Mathilda-Juniper Networks												
1302 N. Mathilda-Menlo Equities												
10. Yahoo	0	0	0	0	0	0	0	0	0	0	0	0
9. Ariba	0	0	0	0	0	0	0	45	0	0	215	0
3. Town Center Mall	0	0	0	0	0	0	0	0	0	0	0	0
4. Olson Site	0	0	0	0	0	0	0	0	0	0	0	0
11. Synopsis	0	0	0	0	0	0	0	0	0	0	0	0
12. Menlo Equities	0	0	0	0	0	0	0	0	0	0	0	0
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	0	0	0
Peery's Chubby's												
Fairchild Veritas												
20. 575 Middlefield	0	0	0	0	0	0	0	0	0	0	0	0
21. 441 Logue	0	0	0	0	0	0	0	0	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	0	0	0	0	0	0	0	0	0	0	0	0
24. 500 Ferguson	0	0	0	0	0	0	0	0	0	0	0	0
313 Fairchild												
615 National												
425 National												
1200 Crittenden												
1950 Charleston Phase II												
400 Castro												
401 Castro												
861 W. Dana												
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	0	0	0	0	0	0	0	45	0	0	215	0

Approved Developments - Trips at Study Intersections

Development	(16) SR 237 EB Ramps/Mathilda											
	AM			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed		735		46	100		938					
1116 Mathilda		55		3	8		70					
771 N. Mathilda			3		16							
375 N. Pastoria												
13. Sandy Plaza	0	0	2	0	16	0	0	0	0	0	0	0
1350 Geneva/1345 Crossman		90			11		240					
7.Mozart	0	2	2	0	13	0	0	0	14	0	0	0
1277 Borregas TSH Office		3			0		10					
1260 Crossman-Network Appliance-Phillips	0	0	6	0	46	0	0	0	0	0	0	0
1220 N. Mathilda-Juniper Networks		78		5	11		99					
1302 N. Mathilda-Menlo Equities		91		6	12		115					
10. Yahoo	0	257	0	0	35	0	386	0	0	0	0	0
9. Ariba	0	219	0	15	30	0	168	0	0	0	0	0
3. Town Center Mall	0	0	1	0	1	0	0	0	1	0	0	0
4. Olson Site	0	2	13	0	1	0	0	0	1	0	0	0
11. Synopsis	0	0	2	0	14	0	0	0	0	0	0	0
12. Menlo Equities	0	108	0	7	20	0	162	0	0	0	0	0
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	7	2	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	8	0	2	0	0	0	0	0	0	0
Peery's Chubby's	0	0	0	0	0	0	0	0	0	0	0	0
Fairchild Veritas												
20. 575 Middlefield	0	0	0	0	0	0	0	0	0	0	0	0
21. 441 Logue	0	0	0	0	0	0	0	0	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	0	0	0	0	0	0	0	0	0	0	0	0
24. 500 Ferguson	0	0	0	0	0	0	0	0	0	0	0	0
313 Fairchild												
615 National												
425 National												
1200 Crittenden												
1950 Charleston Phase II												
400 Castro												
401 Castro												
861 W. Dana												
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	0	1647	39	82	336	0	2188	0	16	0	0	0

Intersection: (16) SR 237 EB Ramps/Mathilda

Development	(16) SR 237 EB Ramps/Mathilda											
	PM			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed		135		300	660		173					
1116 Mathilda		11		24	53		14					
771 N. Mathilda												
375 N. Pastoria			14		10							
13. Sandy Plaza	0	0	14	0	3	0	0	0	0	0	0	0
1350 Geneva/1345 Crossman		17		75			44					
7.Mozart	0	12	13	0	3	0	0	0	3	0	0	0
1277 Borregas TSH Office		0			3		0					
1260 Crossman-Network Appliance-Phillips	0	0	40	0	8	0	0	0	0	0	0	0
1220 N. Mathilda-Juniper Networks		15		32	70		18					
1302 N. Mathilda-Menlo Equities		17		37	80		21					
10. Yahoo	0	50	0	0	242	0	74	0	0	0	0	0
9. Ariba	0	41	0	100	202	0	32	0	0	0	0	0
3. Town Center Mall	0	5	6	0	6	0	0	0	5	0	0	0
4. Olson Site	0	1	9	0	2	0	0	0	2	0	0	0
11. Synopsis	0	0	13	0	3	0	0	0	0	0	0	0
12. Menlo Equities	0	20	0	47	20	0	29	0	0	0	0	0
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	3	1	0	2	0	0	0	0	0	0	0
15. Trammell Crow	0	0	4	0	9	0	0	0	0	0	0	0
Peery's Chubby's	0	0	0	0	0	0	0	0	0	0	0	0
Fairchild-Veritas												
20. 575 Middlefield	0	0	0	0	0	0	0	0	0	0	0	0
21. 441 Logue	0	0	0	0	0	0	0	0	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	0	0	0	0	0	0	0	0	0	0	0	0
24. 500 Ferguson	0	0	0	0	0	0	0	0	0	0	0	0
313 Fairchild												
615 National												
425 National												
1200 Crittenden												
1950 Charleston Phase II												
400 Castro												
401 Castro												
861 W. Dana												
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	0	327	114	540	1451	0	405	0	10	0	0	0

Approved Developments - Trips at Study Intersections

Intersection: (15)SR 237 WB Ramps/Mathilda

Peak Hour: AM

Development	Northbound			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed		1673			146	128					334	
1116 Mathilda		125			11	10					25	
771 N. Mathilda												
375 N. Pastoria											16	
13. Sandy Plaza	0	0	0	0	0	0	0	0	0	16	0	0
1350 Geneva/1345 Crossman		330			11	34						
7.Mozart	2	0	0	0	0	0	0	0	0	13	0	0
1277 Borregas TSH Office		13			0	0					0	
1260 Crossman-Network Appliance-Phillips	0	0	0	0	0	0	0	0	0	46	0	0
1220 N. Mathilda-Juniper Networks		177			15	13					35	
1302 N. Mathilda-Menlo Equities		206			18	16					41	
10. Yahoo	0	643	0	0	35	53	0	0	0	0	0	0
9. Ariba	0	387	0	0	45	0	0	0	0	0	0	110
3. Town Center Mall	0	0	0	0	0	0	0	0	0	1	0	0
4. Olson Site	2	0	0	0	0	0	0	0	0	1	0	0
11. Synopsis	0	0	0	0	0	0	0	0	0	14	0	0
12. Menlo Equities	0	270	0	0	27	22	0	0	0	0	0	54
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	7	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	2	0	0
Peery's Chubby's	0	0	0	0	0	0	0	0	0	0	0	0
Fairchild Veritas												
20. 575 Middlefield	0	0	0	0	0	0	0	0	0	0	0	0
21. 441 Logue	0	0	0	0	0	0	0	0	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	0	0	0	0	0	0	0	0	0	0	0	0
24. 500 Ferguson	0	0	0	0	0	0	0	0	0	0	0	0
313 Fairchild												
615 National												
425 National												
1200 Crittenden												
1950 Charleston Phase II												
400 Castro												
401 Castro												
861 W. Dana												
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	11	3824	0	0	308	276	0	0	0	144	0	564

Intersection: (15)SR 237 WB Ramps/Mathilda

Peak Hour: PM

Development	Northbound			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed		308			960	840					61	
1116 Mathilda		25			77	67					5	
771 N. Mathilda												
375 N. Pastoria										10		
13. Sandy Plaza	0	0	0	0	0	0	0	0	0	3	0	0
1350 Geneva/1345 Crossman		60			75	225						
7.Mozart	12	0	0	0	0	0	0	0	0	3	0	0
1277 Borregas TSH Office	0	0			3	10					0	
1260 Crossman-Network Appliance-Phillips	0	0	0	0	0	0	0	0	0	8	0	0
1220 N. Mathilda-Juniper Networks		33			102	89					7	
1302 N. Mathilda-Menlo Equities		37			117	102					7	
10. Yahoo	0	124	0	0	242	364	0	0	0	0	0	0
9. Ariba	0	73	0	0	302	0	0	0	0	0	0	21
3. Town Center Mall	5	0	0	0	0	0	0	0	0	6	0	0
4. Olson Site	1	0	0	0	0	0	0	0	0	2	0	0
11. Synopsis	0	0	0	0	0	0	0	0	0	3	0	0
12. Menlo Equities	0	49	0	0	174	142	0	0	0	0	0	10
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	3	0	0	0	0	0	0	0	0	2	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	9	0	0
Peery's Chubby's	0	0	0	0	0	0	0	0	0	0	0	0
Fairchild Veritas												
20. 575 Middlefield	0	0	0	0	0	0	0	0	0	0	0	0
21. 441 Logue	0	0	0	0	0	0	0	0	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	0	0	0	0	0	0	0	0	0	0	0	0
24. 500 Ferguson	0	0	0	0	0	0	0	0	0	0	0	0
313 Fairchild												
615 National												
425 National												
1200 Crittenden												
1950 Charleston Phase II												
400 Castro												
401 Castro												
861 W. Dana												
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	21	709	0	0	2052	1839	0	0	0	46	0	111

Approved Developments - Trips at Study Intersections

Intersection: (14) Moffett Park/Mathilda

Peak Hour: AM

Development	Northbound			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed		2007			30	270					223	
1116 Mathilda		150			2	21					17	
771 N. Pastoria												
375 N. Pastoria												
13. Sandy Plaza	0	0	0	0	0	0	0	0	0	0	0	0
1350 Geneva/1345 Crossman		165	165		23					23		
7.Mozart	0	0	0	0	0	0	0	0	0	0	0	0
1277 Borregas TSH Office			13							0		
1260 Crossman-Network Appliance-Phillips	0	0	0	0	0	0	0	0	0	0	0	0
1220 N. Mathilda-Juniper Networks		212			3	29					24	
1302 N. Mathilda-Menlo Equities		247			4	34					28	
10. Yahoo	0	643	0	0	88	0	0	0	0	0	0	0
9. Ariba	497	0	0	0	0	0	0	0	45	0	0	0
3. Town Center Mall	0	0	0	0	0	0	0	0	0	0	0	0
4. Olson Site	0	0	0	0	0	0	0	0	0	0	0	0
11. Synopsis	0	0	0	0	0	0	0	0	0	0	0	0
12. Menlo Equities	0	324	0	0	49	0	0	0	0	0	0	0
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	0	0	0
Peery's Chubby's	0	0	0	0	0	0	0	0	0	0	0	0
Fairchild Veritas												
20. 575 Middlefield	0	0	0	0	0	0	0	0	0	0	0	0
21. 441 Logue	0	0	0	0	0	0	0	0	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	0	0	0	0	0	0	0	0	0	0	0	0
24. 500 Ferguson	0	0	0	0	0	0	0	0	0	0	0	0
313 Fairchild												
615 National												
425 National												
1200 Crittenden												
1950 Charleston Phase II												
400 Castro												
401 Castro												
861 W. Dana												
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	497	3748	178	39	514	0	0	0	45	23	0	292

Intersection: (14) Moffett Park/Mathilda

Peak Hour: PM

Development	Northbound			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed	369			200	1800						41	
1116 Mathilda	30			16	144						3	
771 N. Mathilda												
375 N. Pastoria												
13. Sandy Plaza	0	0	0	0	0	0	0	0	0	0	0	0
1350 Geneva/1345 Crossman		30	30		150					150		
7.Mozart	0	0	0	0	0	0	0	0	0	0	0	0
1277 Borregas TSH Office			0						13			
1260 Crossman-Network Appliance-Phillips	0	0	0	0	0	0	0	0	0	0	0	0
1220 N. Mathilda-Juniper Networks		40		21	192						4	
1302 N. Mathilda-Menlo Equities		45		24	220						5	
10. Yahoo	0	124	0	0	606	0	0	0	0	0	0	0
9. Ariba	94	0	0	0	0	0	0	0	302	0	0	0
3. Town Center Mall	0	0	0	0	0	0	0	0	0	0	0	0
4. Olson Site	0	0	0	0	0	0	0	0	0	0	0	0
11. Synopsis	0	0	0	0	0	0	0	0	0	0	0	0
12. Menlo Equities	0	39	0	0	316	0	0	0	0	0	0	0
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	0	0	0
Peery's Chubby's	0	0	0	0	0	0	0	0	0	0	0	0
Fairchild Veritas												
20. 575 Middlefield	0	0	0	0	0	0	0	0	0	0	0	0
21. 441 Logue	0	0	0	0	0	0	0	0	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	0	0	0	0	0	0	0	0	0	0	0	0
24. 500 Ferguson	0	0	0	0	0	0	0	0	0	0	0	0
313 Fairchild												
615 National												
425 National												
1200 Crittenden												
1950 Charleston Phase II												
400 Castro												
401 Castro												
861 W. Dana												
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	94	677	30	261	3428	0	0	0	302	163	0	53

Approved Developments - Trips at Study Intersections

Intersection: (14)Central Expy/Mary

Peak Hour: AM

Development	Northbound			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed							12	90	90			12
1116 Mathilda							1	7	7			1
771 N. Mathilda												
375 N. Pastoria		4			0	1		6				
13. Sandy Plaza	0	2	1	0	0	0	0	0	0	1	0	0
1350 Geneva/1345 Crossman							3	24	24			3
7.Mozart	0	0	0	0	0	0	0	33	0	0	5	0
1277 Borregas TSH Office												
1260 Crossman-Network Appliance-Phillips	0	0	0	0	0	0	0	0	0	0	0	0
1220 N. Mathilda-Juniper Networks							1	10	10			1
1302 N. Mathilda-Menlo Equities							2	12	12			2
10. Yahoo		26						6	6			60
9. Ariba		23						5	5			50
3. Town Center Mall								1				1
4. Olson Site								1				6
11. Synopsis		6			1	1		6				
12. Menlo Equities		11			1							
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	0	0	0
Peery's Chubby's	20	0	0	0	0	0	0	5	5	0	33	0
Fairchild Veritas												
20. 575 Middlefield	4	0	0	0	0	0	0	1	0	0	6	0
21. 441 Logue	0	0	0	0	0	0	0	0	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	14	0	0	0	0	0	0	2	2	0	14	0
24. 500 Ferguson	0	0	0	0	0	0	0	4	0	0	26	0
313 Fairchild		10						1	1			10
615 National												
425 National												
1200 Crittenden		30						4	4			29
1950 Charleston Phase II		10						1	2			9
400 Castro		11						2	2			11
401 Castro												
861 W. Dana												
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	148	23	1	0	2	21	155	209	27	1	279	0

Intersection: (14)Central Expy/Mary

Peak Hour: PM

Development	Northbound			Southbound			Eastbound			Westbound		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Classic Communities												
1111 Lockheed							80	17	17			80
1116 Mathilda							6	1	2			6
771 N. Mathilda												
375 N. Pastoria		2			4	5	3					
13. Sandy Plaza	0	1	0	0	2	0	0	0	0	1	0	0
1350 Geneva/1345 Crossman							21	4	4			22
7.Mozart	0	0	0	0	0	0	0	7	0	0	30	0
1277 Borregas TSH Office												
1260 Crossman-Network Appliance-Phillips	0	0	0	0	0	0	0	0	0	0	0	0
1220 N. Mathilda-Juniper Networks							9	2	2			9
1302 N. Mathilda-Menlo Equities							10	2	2			10
10. Yahoo		8						54	27			9
9. Ariba		7						100	43			7
3. Town Center Mall								6				5
4. Olson Site								6				3
11. Synopsis		1			5	5	1					
12. Menlo Equities		2			9							
113 S. Mary Apts												
901 SS Citation Homes												
Olson Site												
16. First SJ Housing	0	0	0	0	0	0	0	0	0	0	0	0
15. Trammell Crow	0	0	0	0	0	0	0	0	0	0	0	0
Peery's Chubby's	5	0	0	0	0	0	0	30	16	0	6	0
Fairchild Veritas												
20. 575 Middlefield	1	0	0	0	0	0	0	6	3	0	1	0
21. 441 Logue	0	0	0	0	0	0	0	0	0	0	0	0
22-23. 545 Whisman, 441-465 Whisman	3	0	0	0	0	0	0	13	13	0	3	0
24. 500 Ferguson	0	0	0	0	0	0	0	29	0	0	5	0
313 Fairchild		2						9	9			2
615 National												
425 National												
1200 Crittenden		6						26	27			5
1950 Charleston Phase II		2						9	9			2
400 Castro		4						11	12			4
401 Castro												
861 W. Dana												
Bryant/Evelyn Condos												
348/364 Bryant												
2400 El Camino Real -Skyview												
Total	39	5	0	0	20	136	30	333	159	1	209	0

A P P E N D I X B 4

2013 FREEWAY ANALYSIS
WORKSHEETS



Table B-1
Freeway Segment Analysis-Alternative 2 (Nearby Locations)

Freeway	Segment	Direction	Peak Hour	Year 2013 Baseline ¹					2013 Project Alternative 2				
				Lanes	Average			Project Trips	Volume	Density	LOS ²		
					Speed	Density	LOS ²					% Impact	
US 101	Moffett to SR 85	NB	AM	3	4,235	15	94.1	F	68	4,303	95.6	F	0.99
US 101	Moffett to SR 85	NB	PM	3	4,945	15	109.9	F	234	5,179	115.1	F	3.39
US 101	Moffett to SR 85	SB	AM	3	7,473	50	49.8	E	317	7,791	51.9	E	4.60
US 101	Moffett to SR 85	SB	PM	3	6,353	55	38.5	D	82	6,435	39.0	D	1.19
US 101	Moffett to SR 85	NB HOV	AM	1	1,433	15	95.5	F	23	1,456	97.1	F	1.28
US 101	Moffett to SR 85	NB HOV	PM	1	2,130	40	53.3	E	101	2,231	55.8	F	5.60
US 101	Moffett to SR 85	SB HOV	AM	1	1,950	60	32.5	D	83	2,032	33.9	D	4.60
US 101	Moffett to SR 85	SB HOV	PM	1	1,540	60	25.7	D	20	1,560	26.0	D	1.11
US 101	SR 237 to Moffett	NB	AM	3	4,483	15	99.6	F	664	5,146	114.4	F	9.62
US 101	SR 237 to Moffett	NB	PM	3	4,837	25	64.5	F	185	5,023	67.0	F	2.68
US 101	SR 237 to Moffett	SB	AM	3	5,305	25	70.7	F	176	5,481	73.1	F	2.56
US 101	SR 237 to Moffett	SB	PM	3	6,604	55	40.0	D	761	7,364	44.6	D	11.02
US 101	SR 237 to Moffett	NB HOV	AM	1	1,630	20	81.5	F	241	1,871	93.6	F	10.49
US 101	SR 237 to Moffett	NB HOV	PM	1	1,483	60	24.7	D	57	1,540	25.7	D	2.47
US 101	SR 237 to Moffett	SB HOV	AM	1	1,736	60	28.9	D	58	1,794	29.9	D	2.51
US 101	SR 237 to Moffett	SB HOV	PM	1	1,401	60	23.3	C	161	1,562	26.0	D	7.02
US 101	Mathilda to SR 237	NB	AM	3	5,190	20	86.5	F	346	5,535	92.3	F	5.01
US 101	Mathilda to SR 237	NB	PM	3	5,398	60	30.0	D	95	5,492	30.5	D	1.37
US 101	Mathilda to SR 237	SB	AM	3	6,896	50	46.0	D	88	6,984	46.6	E	1.28
US 101	Mathilda to SR 237	SB	PM	3	5,709	60	31.7	D	388	6,097	33.9	D	5.62
US 101	Mathilda to SR 237	NB HOV	AM	1	1,960	35	56.0	F	130	2,090	59.7	F	5.67
US 101	Mathilda to SR 237	NB HOV	PM	1	1,285	60	21.4	C	23	1,308	21.8	C	0.98
US 101	Mathilda to SR 237	SB HOV	AM	1	1,796	60	29.9	D	23	1,819	30.3	D	1.00
US 101	Mathilda to SR 237	SB HOV	PM	1	1,444	60	24.1	D	98	1,542	25.7	D	4.26
SR 85	Central Expwy to US 101	NB	AM	2	3,469	20	86.7	F	282	3,751	93.8	F	6.14
SR 85	Central Expwy to US 101	NB	PM	2	2,233	65	17.2	C	73	2,306	17.7	C	1.58
SR 85	Central Expwy to US 101	SB	AM	2	1,672	65	12.9	B	57	1,729	13.3	B	1.25
SR 85	Central Expwy to US 101	SB	PM	2	3,777	25	75.5	F	303	4,079	81.6	F	6.58
SR 85	Central Expwy to US 101	NB HOV	AM	1	1,076	65	16.5	C	88	1,163	17.9	C	3.81
SR 85	Central Expwy to US 101	NB HOV	PM	1	558	65	8.6	A	18	576	8.9	A	0.79
SR 85	Central Expwy to US 101	SB HOV	AM	1	836	65	12.9	B	29	865	13.3	B	1.25
SR 85	Central Expwy to US 101	SB HOV	PM	1	854	65	13.1	B	68	922	14.2	B	2.97
SR 237	Maude to US 101	WB	AM	2	3,333	60	27.8	D	23	3,356	28.0	D	0.50
SR 237	Maude to US 101	WB	PM	2	4,622	55	42.0	D	108	4,730	43.0	D	2.35
SR 237	Maude to US 101	EB	AM	2	3,513	25	70.3	F	116	3,629	72.6	F	2.52
SR 237	Maude to US 101	EB	PM	2	1,809	65	13.9	B	20	1,829	14.1	B	0.43
SR 237	US 101 to Mathilda	WB	AM	2	4,129	60	34.4	D	391	4,520	37.7	D	8.50
SR 237	US 101 to Mathilda	WB	PM	2	4,482	55	40.7	D	227	4,709	42.8	D	4.93
SR 237	US 101 to Mathilda	EB	AM	2	2,799	15	93.3	F	223	3,022	100.7	F	4.85
SR 237	US 101 to Mathilda	EB	PM	2	3,092	60	25.8	D	433	3,525	29.4	D	9.41
SR 237	Mathilda to N. Fair Oaks	WB	AM	2	3,944	60	32.9	D	324	4,268	35.6	D	7.04
SR 237	Mathilda to N. Fair Oaks	WB	PM	2	4,746	55	43.1	D	104	4,850	44.1	D	2.26
SR 237	Mathilda to N. Fair Oaks	EB	AM	2	3,642	25	72.8	F	107	3,749	75.0	F	2.33
SR 237	Mathilda to N. Fair Oaks	EB	PM	2	2,713	60	22.6	C	512	3,225	26.9	D	11.13
SR 237	Mathilda to N. Fair Oaks	EB HOV	AM	1	1,780	60	29.7	D	146	1,926	32.1	D	6.35
SR 237	Mathilda to N. Fair Oaks	EB HOV	PM	1	696	65	10.7	B	15	712	10.9	B	0.66

Notes:

¹ Lanes and speed from VTA 2000 CMP Monitoring Data with 0.5 percent growth factor per year applied to the volumes. Baseline volumes also include trips associated with the CUP.

² LOS based on density presented in CMP monitoring report.

Significant and potentially significant impacts are indicated in **bold**.

Table B-2
Freeway Segment Analysis-Alternative 3 (Nearby Locations)

Freeway	Segment	Direction	Peak Hour	Year 2013 Baseline ¹					2013 Project Alternative 3				
				Lanes	Volume	Average		LOS ²	Project		Volume	Density	% Impact
						Speed	Density		Trips	Volume			
US 101	Moffett to SR 85	NB	AM	3	4,235	15	94.1	F	55	4,290	95.3	F	0.80
US 101	Moffett to SR 85	NB	PM	3	4,945	15	109.9	F	295	5,240	116.4	F	4.27
US 101	Moffett to SR 85	SB	AM	3	7,473	50	49.8	E	281	7,754	51.7	E	4.07
US 101	Moffett to SR 85	SB	PM	3	6,353	55	38.5	D	78	6,431	39.0	D	1.13
US 101	Moffett to SR 85	NB HOV	AM	1	1,433	15	95.5	F	19	1,452	96.8	F	1.04
US 101	Moffett to SR 85	NB HOV	PM	1	2,130	40	53.3	E	127	2,257	56.4	F	7.06
US 101	Moffett to SR 85	SB HOV	AM	1	1,950	60	32.5	D	73	2,023	33.7	D	4.07
US 101	Moffett to SR 85	SB HOV	PM	1	1,540	60	25.7	D	19	1,559	26.0	D	1.05
US 101	SR 237 to Moffett	NB	AM	3	4,483	15	99.6	F	574	5,057	112.4	F	8.32
US 101	SR 237 to Moffett	NB	PM	3	4,837	25	64.5	F	172	5,010	66.8	F	2.50
US 101	SR 237 to Moffett	SB	AM	3	5,305	25	70.7	F	131	5,436	72.5	F	1.90
US 101	SR 237 to Moffett	SB	PM	3	6,604	55	40.0	D	791	7,395	44.8	D	11.47
US 101	SR 237 to Moffett	NB HOV	AM	1	1,630	20	81.5	F	209	1,839	91.9	F	9.08
US 101	SR 237 to Moffett	NB HOV	PM	1	1,483	60	24.7	D	53	1,536	25.6	D	2.30
US 101	SR 237 to Moffett	SB HOV	AM	1	1,736	60	28.9	D	43	1,779	29.7	D	1.87
US 101	SR 237 to Moffett	SB HOV	PM	1	1,401	60	23.3	C	168	1,569	26.1	D	7.30
US 101	Mathilda to SR 237	NB	AM	3	5,190	20	86.5	F	300	5,489	91.5	F	4.34
US 101	Mathilda to SR 237	NB	PM	3	5,398	60	30.0	D	92	5,490	30.5	D	1.33
US 101	Mathilda to SR 237	SB	AM	3	6,896	50	46.0	D	68	6,964	46.4	E	0.99
US 101	Mathilda to SR 237	SB	PM	3	5,709	60	31.7	D	403	6,112	34.0	D	5.84
US 101	Mathilda to SR 237	NB HOV	AM	1	1,960	35	56.0	F	113	2,073	59.2	F	4.92
US 101	Mathilda to SR 237	NB HOV	PM	1	1,285	60	21.4	C	22	1,307	21.8	C	0.95
US 101	Mathilda to SR 237	SB HOV	AM	1	1,796	60	29.9	D	18	1,814	30.2	D	0.77
US 101	Mathilda to SR 237	SB HOV	PM	1	1,444	60	24.1	D	102	1,546	25.8	D	4.43
SR 85	Central Expwy to US 101	NB	AM	2	3,469	20	86.7	F	218	3,687	92.2	F	4.75
SR 85	Central Expwy to US 101	NB	PM	2	2,233	65	17.2	C	63	2,296	17.7	C	1.37
SR 85	Central Expwy to US 101	SB	AM	2	1,672	65	12.9	B	39	1,711	13.2	B	0.86
SR 85	Central Expwy to US 101	SB	PM	2	3,777	25	75.5	F	285	4,062	81.2	F	6.21
SR 85	Central Expwy to US 101	NB HOV	AM	1	1,076	65	16.5	C	68	1,143	17.6	C	2.94
SR 85	Central Expwy to US 101	NB HOV	PM	1	558	65	8.6	A	16	574	8.8	A	0.69
SR 85	Central Expwy to US 101	SB HOV	AM	1	836	65	12.9	B	20	856	13.2	B	0.86
SR 85	Central Expwy to US 101	SB HOV	PM	1	854	65	13.1	B	65	918	14.1	B	2.81
SR 237	Maude to US 101	WB	AM	2	3,333	60	27.8	D	14	3,347	27.9	D	0.30
SR 237	Maude to US 101	WB	PM	2	4,622	55	42.0	D	58	4,680	42.5	D	1.26
SR 237	Maude to US 101	EB	AM	2	3,513	25	70.3	F	63	3,576	71.5	F	1.37
SR 237	Maude to US 101	EB	PM	2	1,809	65	13.9	B	17	1,826	14.0	B	0.37
SR 237	US 101 to Mathilda	WB	AM	2	4,129	60	34.4	D	365	4,494	37.5	D	7.93
SR 237	US 101 to Mathilda	WB	PM	2	4,482	55	40.7	D	165	4,647	42.2	D	3.59
SR 237	US 101 to Mathilda	EB	AM	2	2,799	15	93.3	F	147	2,946	98.2	F	3.20
SR 237	US 101 to Mathilda	EB	PM	2	3,092	60	25.8	D	447	3,539	29.5	D	9.72
SR 237	Mathilda to N. Fair Oaks	WB	AM	2	3,944	60	32.9	D	287	4,232	35.3	D	6.25
SR 237	Mathilda to N. Fair Oaks	WB	PM	2	4,746	55	43.1	D	99	4,845	44.0	D	2.16
SR 237	Mathilda to N. Fair Oaks	EB	AM	2	3,642	25	72.8	F	87	3,729	74.6	F	1.89
SR 237	Mathilda to N. Fair Oaks	EB	PM	2	2,713	60	22.6	C	497	3,210	26.7	D	10.80
SR 237	Mathilda to N. Fair Oaks	EB HOV	AM	1	1,780	60	29.7	D	130	1,910	31.8	D	5.64
SR 237	Mathilda to N. Fair Oaks	EB HOV	PM	1	696	65	10.7	B	15	711	10.9	B	0.63

Notes:

¹ Lanes and speed from VTA 2000 CMP Monitoring Data with 0.5 percent growth factor per year applied to the volumes. Baseline volumes also include trips associated with the CUP.

² LOS based on density presented in CMP monitoring report.

Significant and potentially significant impacts are indicated in **bold**.

Table B-3
Freeway Segment Analysis-Alternative 4 (Nearby Locations)

Freeway	Segment	Direction	Peak Hour	Year 2013 Baseline ¹					2013 Project Alternative 4				
				Lanes	Average			Project Trips	2013 Project Alternative 4				
					Speed	Density	LOS ²		Volume	Density	LOS ²	% Impact	
US 101	Moffett to SR 85	NB	AM	3	4,235	15	94.1	F	84	4,319	96.0	F	1.22
US 101	Moffett to SR 85	NB	PM	3	4,945	15	109.9	F	382	5,327	118.4	F	5.54
US 101	Moffett to SR 85	SB	AM	3	7,473	50	49.8	E	396	7,869	52.5	E	5.74
US 101	Moffett to SR 85	SB	PM	3	6,353	55	38.5	D	101	6,454	39.1	D	1.46
US 101	Moffett to SR 85	NB HOV	AM	1	1,433	15	95.5	F	29	1,462	97.4	F	1.59
US 101	Moffett to SR 85	NB HOV	PM	1	2,130	40	53.3	E	165	2,295	57.4	F	9.15
US 101	Moffett to SR 85	SB HOV	AM	1	1,950	60	32.5	D	103	2,053	34.2	D	5.74
US 101	Moffett to SR 85	SB HOV	PM	1	1,540	60	25.7	D	24	1,565	26.1	D	1.36
US 101	SR 237 to Moffett	NB	AM	3	4,483	15	99.6	F	755	5,237	116.4	F	10.94
US 101	SR 237 to Moffett	NB	PM	3	4,837	25	64.5	F	229	5,066	67.6	F	3.32
US 101	SR 237 to Moffett	SB	AM	3	5,305	25	70.7	F	202	5,507	73.4	F	2.93
US 101	SR 237 to Moffett	SB	PM	3	6,604	55	40.0	D	959	7,562	45.8	D	13.89
US 101	SR 237 to Moffett	NB HOV	AM	1	1,630	20	81.5	F	274	1,904	95.2	F	11.93
US 101	SR 237 to Moffett	NB HOV	PM	1	1,483	60	24.7	D	70	1,554	25.9	D	3.05
US 101	SR 237 to Moffett	SB HOV	AM	1	1,736	60	28.9	D	66	1,802	30.0	D	2.87
US 101	SR 237 to Moffett	SB HOV	PM	1	1,401	60	23.3	C	203	1,604	26.7	D	8.84
US 101	Mathilda to SR 237	NB	AM	3	5,190	20	86.5	F	393	5,582	93.0	F	5.69
US 101	Mathilda to SR 237	NB	PM	3	5,398	60	30.0	D	116	5,514	30.6	D	1.69
US 101	Mathilda to SR 237	SB	AM	3	6,896	50	46.0	D	101	6,996	46.6	E	1.46
US 101	Mathilda to SR 237	SB	PM	3	5,709	60	31.7	D	487	6,196	34.4	D	7.06
US 101	Mathilda to SR 237	NB HOV	AM	1	1,960	35	56.0	F	148	2,108	60.2	F	6.45
US 101	Mathilda to SR 237	NB HOV	PM	1	1,285	60	21.4	C	28	1,313	21.9	C	1.20
US 101	Mathilda to SR 237	SB HOV	AM	1	1,796	60	29.9	D	26	1,822	30.4	D	1.14
US 101	Mathilda to SR 237	SB HOV	PM	1	1,444	60	24.1	D	123	1,567	26.1	D	5.35
SR 85	Central Expwy to US 101	NB	AM	2	3,469	20	86.7	F	346	3,814	95.4	F	7.52
SR 85	Central Expwy to US 101	NB	PM	2	2,233	65	17.2	C	98	2,331	17.9	C	2.12
SR 85	Central Expwy to US 101	SB	AM	2	1,672	65	12.9	B	71	1,743	13.4	B	1.55
SR 85	Central Expwy to US 101	SB	PM	2	3,777	25	75.5	F	414	4,191	83.8	F	9.01
SR 85	Central Expwy to US 101	NB HOV	AM	1	1,076	65	16.5	C	107	1,183	18.2	C	4.66
SR 85	Central Expwy to US 101	NB HOV	PM	1	558	65	8.6	A	24	583	9.0	A	1.06
SR 85	Central Expwy to US 101	SB HOV	AM	1	836	65	12.9	B	36	872	13.4	B	1.55
SR 85	Central Expwy to US 101	SB HOV	PM	1	854	65	13.1	B	94	948	14.6	B	4.07
SR 237	Maude to US 101	WB	AM	2	3,333	60	27.8	D	27	3,360	28.0	D	0.59
SR 237	Maude to US 101	WB	PM	2	4,622	55	42.0	D	135	4,757	43.2	D	2.93
SR 237	Maude to US 101	EB	AM	2	3,513	25	70.3	F	146	3,659	73.2	F	3.17
SR 237	Maude to US 101	EB	PM	2	1,809	65	13.9	B	25	1,834	14.1	B	0.54
SR 237	US 101 to Mathilda	WB	AM	2	4,129	60	34.4	D	487	4,616	38.5	D	10.59
SR 237	US 101 to Mathilda	WB	PM	2	4,482	55	40.7	D	282	4,764	43.3	D	6.13
SR 237	US 101 to Mathilda	EB	AM	2	2,799	15	93.3	F	280	3,079	102.6	F	6.09
SR 237	US 101 to Mathilda	EB	PM	2	3,092	60	25.8	D	544	3,636	30.3	D	11.83
SR 237	Mathilda to N. Fair Oaks	WB	AM	2	3,944	60	32.9	D	404	4,349	36.2	D	8.79
SR 237	Mathilda to N. Fair Oaks	WB	PM	2	4,746	55	43.1	D	128	4,874	44.3	D	2.79
SR 237	Mathilda to N. Fair Oaks	EB	AM	2	3,642	25	72.8	F	133	3,775	75.5	F	2.89
SR 237	Mathilda to N. Fair Oaks	EB	PM	2	2,713	60	22.6	C	643	3,356	28.0	D	13.98
SR 237	Mathilda to N. Fair Oaks	EB HOV	AM	1	1,780	60	29.7	D	183	1,962	32.7	D	7.94
SR 237	Mathilda to N. Fair Oaks	EB HOV	PM	1	696	65	10.7	B	19	715	11.0	B	0.82

Notes:

¹ Lanes and speed from VTA 2000 CMP Monitoring Data with 0.5 percent growth factor per year applied to the volumes. Baseline volumes also include trips associated with the CUP.

² LOS based on density presented in CMP monitoring report.

Significant and potentially significant impacts are indicated in **bold**.

Table B-4
Freeway Segment Analysis-Alternative 5 (Nearby Locations)

Freeway	Segment	Direction	Peak Hour	Year 2013 Baseline ¹					2013 Project Alternative 5				
				Lanes	Volume	Average		LOS ²	Project		Trips	Volume	Density
						Speed	Density		Trips	Volume			
US 101	Moffett to SR 85	NB	AM	3	4,235	15	94.1	F	53	4,288	95.3	F	0.77
US 101	Moffett to SR 85	NB	PM	3	4,945	15	109.9	F	190	5,135	114.1	F	2.76
US 101	Moffett to SR 85	SB	AM	3	7,473	50	49.8	E	159	7,632	50.9	E	2.30
US 101	Moffett to SR 85	SB	PM	3	6,353	55	38.5	D	48	6,402	38.8	D	0.70
US 101	Moffett to SR 85	NB HOV	AM	1	1,433	15	95.5	F	18	1,451	96.7	F	1.00
US 101	Moffett to SR 85	NB HOV	PM	1	2,130	40	53.3	E	82	2,212	55.3	F	4.55
US 101	Moffett to SR 85	SB HOV	AM	1	1,950	60	32.5	D	41	1,991	33.2	D	2.30
US 101	Moffett to SR 85	SB HOV	PM	1	1,540	60	25.7	D	12	1,552	25.9	D	0.65
US 101	SR 237 to Moffett	NB	AM	3	4,483	15	99.6	F	364	4,847	107.7	F	5.28
US 101	SR 237 to Moffett	NB	PM	3	4,837	25	64.5	F	133	4,971	66.3	F	1.93
US 101	SR 237 to Moffett	SB	AM	3	5,305	25	70.7	F	133	5,438	72.5	F	1.93
US 101	SR 237 to Moffett	SB	PM	3	6,604	55	40.0	D	561	7,165	43.4	D	8.13
US 101	SR 237 to Moffett	NB HOV	AM	1	1,630	20	81.5	F	133	1,763	88.1	F	5.76
US 101	SR 237 to Moffett	NB HOV	PM	1	1,483	60	24.7	D	41	1,524	25.4	D	1.78
US 101	SR 237 to Moffett	SB HOV	AM	1	1,736	60	28.9	D	44	1,780	29.7	D	1.90
US 101	SR 237 to Moffett	SB HOV	PM	1	1,401	60	23.3	C	119	1,520	25.3	D	5.17
US 101	Mathilda to SR 237	NB	AM	3	5,190	20	86.5	F	187	5,377	89.6	F	2.71
US 101	Mathilda to SR 237	NB	PM	3	5,398	60	30.0	D	73	5,471	30.4	D	1.05
US 101	Mathilda to SR 237	SB	AM	3	6,896	50	46.0	D	73	6,969	46.5	E	1.06
US 101	Mathilda to SR 237	SB	PM	3	5,709	60	31.7	D	295	6,004	33.4	D	4.27
US 101	Mathilda to SR 237	NB HOV	AM	1	1,960	35	56.0	F	71	2,031	58.0	F	3.07
US 101	Mathilda to SR 237	NB HOV	PM	1	1,285	60	21.4	C	17	1,303	21.7	C	0.75
US 101	Mathilda to SR 237	SB HOV	AM	1	1,796	60	29.9	D	19	1,815	30.3	D	0.83
US 101	Mathilda to SR 237	SB HOV	PM	1	1,444	60	24.1	D	74	1,518	25.3	D	3.24
SR 85	Central Expwy to US 101	NB	AM	2	3,469	20	86.7	F	140	3,608	90.2	F	3.04
SR 85	Central Expwy to US 101	NB	PM	2	2,233	65	17.2	C	59	2,292	17.6	C	1.29
SR 85	Central Expwy to US 101	SB	AM	2	1,672	65	12.9	B	51	1,723	13.3	B	1.10
SR 85	Central Expwy to US 101	SB	PM	2	3,777	25	75.5	F	206	3,982	79.6	F	4.47
SR 85	Central Expwy to US 101	NB HOV	AM	1	1,076	65	16.5	C	43	1,119	17.2	C	1.88
SR 85	Central Expwy to US 101	NB HOV	PM	1	558	65	8.6	A	15	573	8.8	A	0.64
SR 85	Central Expwy to US 101	SB HOV	AM	1	836	65	12.9	B	25	861	13.3	B	1.10
SR 85	Central Expwy to US 101	SB HOV	PM	1	854	65	13.1	B	46	900	13.9	B	2.02
SR 237	Maude to US 101	WB	AM	2	3,333	60	27.8	D	19	3,352	27.9	D	0.41
SR 237	Maude to US 101	WB	PM	2	4,622	55	42.0	D	95	4,717	42.9	D	2.07
SR 237	Maude to US 101	EB	AM	2	3,513	25	70.3	F	55	3,568	71.4	F	1.20
SR 237	Maude to US 101	EB	PM	2	1,809	65	13.9	B	12	1,821	14.0	B	0.26
SR 237	US 101 to Mathilda	WB	AM	2	4,129	60	34.4	D	227	4,356	36.3	D	4.93
SR 237	US 101 to Mathilda	WB	PM	2	4,482	55	40.7	D	79	4,561	41.5	D	1.72
SR 237	US 101 to Mathilda	EB	AM	2	2,799	15	93.3	F	80	2,879	96.0	F	1.74
SR 237	US 101 to Mathilda	EB	PM	2	3,092	60	25.8	D	311	3,403	28.4	D	6.76
SR 237	Mathilda to N. Fair Oaks	WB	AM	2	3,944	60	32.9	D	161	4,105	34.2	D	3.51
SR 237	Mathilda to N. Fair Oaks	WB	PM	2	4,746	55	43.1	D	72	4,818	43.8	D	1.55
SR 237	Mathilda to N. Fair Oaks	EB	AM	2	3,642	25	72.8	F	84	3,726	74.5	F	1.83
SR 237	Mathilda to N. Fair Oaks	EB	PM	2	2,713	60	22.6	C	321	3,034	25.3	D	6.98
SR 237	Mathilda to N. Fair Oaks	EB HOV	AM	1	1,780	60	29.7	D	73	1,853	30.9	D	3.16
SR 237	Mathilda to N. Fair Oaks	EB HOV	PM	1	696	65	10.7	B	10	707	10.9	B	0.46

Notes:

¹ Lanes and speed from VTA 2000 CMP Monitoring Data with 0.5 percent growth factor per year applied to the volumes. Baseline volumes also include trips associated with the CUP.

² LOS based on density presented in CMP monitoring report.

Significant and potentially significant impacts are indicated in **bold**.

Table C-1
Freeway Segment Analysis-Alternative 2 (External Locations)

Freeway	Segment	Peak Hour	Existing LOS in 2013?		Incl. HOV Lanes		Mixed-Flow Lanes		1% of Capacity		Project Trips		% of Capacity		Potentially Significant Impact?	
			NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
SR 85	Homestead to Fremont	AM	F	D	Y	2	2	44	44	243	20	5.5%	0.4%	YES	No	
		PM	D	E	Y	2	2	44	44	29	230	0.7%	5.2%	No	YES	
SR 85	Winchester to Saratoga	AM	F	D	Y	2	2	44	44	122	10	2.8%	0.2%	YES	No	
		PM	D	F	Y	2	2	44	44	14	115	0.3%	2.6%	No	YES	
SR 85	Almaden to Camden	AM	E	D	Y	2	2	44	44	61	5	1.4%	0.1%	YES	No	
		PM	D	D	Y	2	2	44	44	7	58	0.2%	1.3%	No	YES	
SR 17	Bear Creek to SR 9	AM	F	C	N	2	2	44	44	29	2	0.7%	0.1%	No	No	
		PM	C	F	N	2	2	44	44	3	27	0.1%	0.6%	No	No	
SR 87	Curtner to Almaden	AM	F	C	Y	2	2	44	44	37	3	0.8%	0.1%	No	No	
		PM	D	F	Y	2	2	44	44	4	35	0.1%	0.8%	No	No	
SR 87	Julian to Taylor	AM	F	B	Y	2	2	44	44	97	8	2.2%	0.2%	YES	No	
		PM	C	D	Y	2	2	44	44	12	92	0.3%	2.1%	No	YES	
US 101	Cochrane to Scheller	AM	F	C	N	3	3	69	69	29	2	0.4%	0.0%	No	No	
		PM	D	D	N	3	3	69	69	3	27	0.0%	0.4%	No	No	
US 101	Tully to Story	AM	F	C	Y	3	3	69	69	97	8	1.4%	0.1%	YES	No	
		PM	D	F	Y	3	3	69	69	12	92	0.2%	1.3%	No	YES	
US 101	McKee to Old Oakland	AM	F	C	Y	3	3	69	69	195	16	2.8%	0.2%	YES	No	
		PM	C	E	Y	3	3	69	69	23	184	0.3%	2.7%	No	YES	
US 101	DeLaCruz to Montague	AM	E	D	Y	3	3	69	69	243	20	3.5%	0.3%	YES	No	
		PM	D	F	Y	3	3	69	69	29	230	0.4%	3.3%	No	YES	
US 101	Oregon/Embarcadero to University	AM	F	F	Y	3	3	69	69	148	12	2.2%	0.2%	YES	No	
		PM	F	F	Y	3	3	69	69	18	141	0.3%	2.0%	No	YES	
US 101	Woodside to Whipple	AM	E	F	Y	3	3	69	69	43	3	0.6%	0.0%	No	No	
		PM	F	F	Y	3	3	69	69	5	40	0.1%	0.6%	No	No	
SR 84	University to Alameda Co. Line	AM	A	F	N	3	3	69	69	5	61	0.1%	0.9%	No	No	
I-280	Saratoga to Lawrence	AM	F	D	Y	3	3	69	69	58	7	0.8%	0.1%	No	No	
		PM	D	E	Y	3	3	69	69	14	115	0.2%	1.7%	No	YES	
I-680	SR 237 to Jacklin	AM	E	D	N	3	3	69	69	9	107	0.1%	1.6%	No	YES	
		PM	F	D	N	3	3	69	69	102	13	1.5%	0.2%	YES	No	
I-680	Scott Creek to SR 238	AM	N/A	N/A	N	3	3	69	69	8	100	0.1%	1.5%	No	YES	
		PM	D	A	N	3	3	69	69	95	12	1.4%	0.2%	YES	No	
I-680	SR 84 to Bernal	AM	N/A	N/A	N	3	3	69	69	8	95	0.1%	1.4%	No	YES	
		PM	B	A	N	3	3	69	69	89	11	1.3%	0.2%	YES	No	
I-680	I-580 to Alcosta	AM	N/A	N/A	N	3	3	69	69	3	40	0.0%	0.6%	No	No	
		PM	A	A	N	3	3	69	69	38	5	0.5%	0.1%	No	No	
I-580	I-205 to SR 84/1st	AM	N/A	N/A	N	4	4	92	92	3	37	0.0%	0.4%	No	No	
		PM	C	A	N	4	4	92	92	35	4	0.4%	0.0%	No	No	
I-580	Santa Rita to I-680	AM	N/A	N/A	N	4	4	92	92	4	46	0.0%	0.5%	No	No	
		PM	F	A	N	4	4	92	92	44	5	0.5%	0.1%	No	No	
I-880	SR 237 to Dixon	AM	D	D	N	3	3	69	69	9	109	0.1%	1.6%	No	YES	
		PM	F	D	N	3	3	69	69	103	13	1.5%	0.2%	YES	No	
I-880	Alv.-Niles to Tennyson	AM	N/A	N/A	N	4	4	92	92	18	229	0.2%	2.5%	No	YES	
		PM	F	B	N	4	4	92	92	217	27	2.4%	0.3%	YES	No	
SR 237	Zanker to McCarthy	AM	D	F	Y	3	3	69	69	17	207	0.2%	3.0%	No	YES	
		PM	F	D	Y	3	3	69	69	196	25	2.8%	0.4%	YES	No	
SR 237	FairOaks to Lawrence	AM	D	D	Y	2	2	44	44	18	219	0.4%	5.0%	No	YES	
		PM	C	D	Y	2	2	44	44	207	26	4.7%	0.6%	YES	No	

Notes:

¹ Sources: Density-based LOS from VTA 2000 CMP Monitoring Data, Alameda County CMP 2000 LOS Monitoring Report, and San Mateo County CMP 1999 Monitoring Report.

² Capacity assumes 2,300 vehicles per hour per lane (vphpl) for six- or more lane freeways and 2,200 vphpl for four-lane freeways (auxiliary lanes are not included).

Significant and potentially significant impacts are indicated in bold.

Table C-2
Freeway Segment Analysis-Alternative 3 (External Locations)

Freeway	Segment	Peak Hour	Existing LOS in 2013?		Incl. HOV Lanes		Mixed-Flow Lanes		1% of Capacity		Project Trips		% of Capacity		Potentially Significant Impact?	
			NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
SR 85	Homestead to Fremont	AM	F	D	Y	2	2	44	44	220	18	5.0%	0.4%	YES	No	
		PM	D	E	Y	2	2	44	44	34	235	0.8%	5.3%	No	YES	
SR 85	Winchester to Saratoga	AM	F	D	Y	2	2	44	44	110	9	2.5%	0.2%	YES	No	
		PM	D	F	Y	2	2	44	44	17	118	0.4%	2.7%	No	YES	
SR 85	Almaden to Camden	AM	E	D	Y	2	2	44	44	55	5	1.3%	0.1%	YES	No	
		PM	D	D	Y	2	2	44	44	9	59	0.2%	1.3%	No	YES	
SR 17	Bear Creek to SR 9	AM	F	C	N	2	2	44	44	26	2	0.6%	0.0%	No	No	
		PM	C	F	N	2	2	44	44	4	28	0.1%	0.6%	No	No	
SR 87	Curtner to Almaden	AM	F	C	Y	2	2	44	44	33	3	0.8%	0.1%	No	No	
		PM	D	F	Y	2	2	44	44	5	35	0.1%	0.8%	No	No	
SR 87	Julian to Taylor	AM	F	B	Y	2	2	44	44	88	7	2.0%	0.2%	YES	No	
		PM	C	D	Y	2	2	44	44	14	94	0.3%	2.1%	No	YES	
US 101	Cochrane to Scheller	AM	F	C	N	3	3	69	69	26	2	0.4%	0.0%	No	No	
		PM	D	D	N	3	3	69	69	4	28	0.1%	0.4%	No	No	
US 101	Tully to Story	AM	F	C	Y	3	3	69	69	88	7	1.3%	0.1%	YES	No	
		PM	D	F	Y	3	3	69	69	14	94	0.2%	1.4%	No	YES	
US 101	McKee to Old Oakland	AM	F	C	Y	3	3	69	69	176	15	2.6%	0.2%	YES	No	
		PM	C	E	Y	3	3	69	69	27	188	0.4%	2.7%	No	YES	
US 101	DeLaCruz to Montague	AM	E	D	Y	3	3	69	69	220	18	3.2%	0.3%	YES	No	
		PM	D	F	Y	3	3	69	69	34	235	0.5%	3.4%	No	YES	
US 101	Oregon/Embarcadero to University	AM	F	F	Y	3	3	69	69	134	11	1.9%	0.2%	YES	No	
		PM	F	F	Y	3	3	69	69	21	143	0.3%	2.1%	No	YES	
US 101	Woodside to Whipple	AM	E	F	Y	3	3	69	69	39	3	0.6%	0.0%	No	No	
		PM	F	F	Y	3	3	69	69	6	41	0.1%	0.6%	No	No	
SR 84	University to Alameda Co. Line	AM	A	F	N	3	3	69	69	5	55	0.1%	0.8%	No	No	
I-280	Saratoga to Lawrence	AM	F	D	Y	3	3	69	69	59	9	0.9%	0.1%	No	No	
		PM	D	E	Y	3	3	69	69	17	118	0.2%	1.7%	No	YES	
I-680	SR 237 to Jacklin	AM	E	D	N	3	3	69	69	8	97	0.1%	1.4%	No	YES	
		PM	F	D	N	3	3	69	69	104	15	1.5%	0.2%	YES	No	
I-680	Scott Creek to SR 238	AM	N/A	N/A	N	3	3	69	69	7	91	0.1%	1.3%	No	YES	
		PM	D	A	N	3	3	69	69	97	14	1.4%	0.2%	YES	No	
I-680	SR 84 to Bernal	AM	N/A	N/A	N	3	3	69	69	7	86	0.1%	1.2%	No	YES	
		PM	B	A	N	3	3	69	69	91	13	1.3%	0.2%	YES	No	
I-680	I-580 to Alcosta	AM	N/A	N/A	N	3	3	69	69	3	36	0.0%	0.5%	No	No	
		PM	A	A	N	3	3	69	69	39	6	0.6%	0.1%	No	No	
I-580	I-205 to SR 84/1st	AM	N/A	N/A	N	4	4	92	92	3	33	0.0%	0.4%	No	No	
		PM	C	A	N	4	4	92	92	35	5	0.4%	0.1%	No	No	
I-580	Santa Rita to I-680	AM	N/A	N/A	N	4	4	92	92	3	42	0.0%	0.5%	No	No	
		PM	F	A	N	4	4	92	92	45	6	0.5%	0.1%	No	No	
I-880	SR 237 to Dixon	AM	D	D	N	3	3	69	69	8	99	0.1%	1.4%	No	YES	
		PM	F	D	N	3	3	69	69	105	15	1.5%	0.2%	YES	No	
I-880	Alv.-Niles to Tennyson	AM	N/A	N/A	N	4	4	92	92	17	208	0.2%	2.3%	No	YES	
		PM	F	B	N	4	4	92	92	221	32	2.4%	0.3%	YES	No	
SR 237	Zanker to McCarthy	AM	D	F	Y	3	3	69	69	15	187	0.2%	2.7%	No	YES	
		PM	F	D	Y	3	3	69	69	200	29	2.9%	0.4%	YES	No	
SR 237	FairOaks to Lawrence	AM	D	D	Y	2	2	44	44	16	198	0.4%	4.5%	No	YES	
		PM	C	D	Y	2	2	44	44	212	31	4.8%	0.7%	YES	No	

Notes:

¹ Sources: Density-based LOS from VTA 2000 CMP Monitoring Data, Alameda County CMP 2000 LOS Monitoring Report, and San Mateo County CMP 1999 Monitoring Report.

² Capacity assumes 2,300 vehicles per hour per lane (vphpl) for six- or more lane freeways and 2,200 vphpl for four-lane freeways (auxiliary lanes are not included).

Significant and potentially significant impacts are indicated in bold.

Table C-3
Freeway Segment Analysis-Alternative 4 (External Locations)

Freeway	Segment	Peak Hour	Existing LOS in 2013?		Incl. HOV Lanes		Mixed-Flow Lanes		1% of Capacity		Project Trips		% of Capacity		Potentially Significant Impact?	
			NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
SR 85	Homestead to Fremont	AM	F	D	Y	2	2	44	44	319	27	7.3%	0.6%	YES	No	
		PM	D	E	Y	2	2	44	44	40	315	0.9%	7.1%	No	YES	
SR 85	Winchester to Saratoga	AM	F	D	Y	2	2	44	44	160	13	3.6%	0.3%	YES	No	
		PM	D	F	Y	2	2	44	44	20	157	0.5%	3.6%	No	YES	
SR 85	Almaden to Camden	AM	E	D	Y	2	2	44	44	80	7	1.8%	0.2%	YES	No	
		PM	D	D	Y	2	2	44	44	10	79	0.2%	1.8%	No	YES	
SR 17	Bear Creek to SR 9	AM	F	C	N	2	2	44	44	38	3	0.9%	0.1%	No	No	
		PM	C	F	N	2	2	44	44	5	37	0.1%	0.8%	No	No	
SR 87	Curtner to Almaden	AM	F	C	Y	2	2	44	44	48	4	1.1%	0.1%	YES	No	
		PM	D	F	Y	2	2	44	44	6	47	0.1%	1.1%	No	YES	
SR 87	Julian to Taylor	AM	F	B	Y	2	2	44	44	128	11	2.9%	0.2%	YES	No	
		PM	C	D	Y	2	2	44	44	16	126	0.4%	2.9%	No	YES	
US 101	Cochrane to Scheller	AM	F	C	N	3	3	69	69	38	3	0.5%	0.0%	No	No	
		PM	D	D	N	3	3	69	69	5	37	0.1%	0.5%	No	No	
US 101	Tully to Story	AM	F	C	Y	3	3	69	69	128	11	1.8%	0.2%	YES	No	
		PM	D	F	Y	3	3	69	69	16	126	0.2%	1.8%	No	YES	
US 101	McKee to Old Oakland	AM	F	C	Y	3	3	69	69	255	21	3.7%	0.3%	YES	No	
		PM	C	E	Y	3	3	69	69	32	252	0.5%	3.6%	No	YES	
US 101	DeLaCruz to Montague	AM	E	D	Y	3	3	69	69	319	27	4.6%	0.4%	YES	No	
		PM	D	F	Y	3	3	69	69	40	315	0.6%	4.6%	No	YES	
US 101	Oregon/Embarcadero to University	AM	F	F	Y	3	3	69	69	195	16	2.8%	0.2%	YES	No	
		PM	F	F	Y	3	3	69	69	25	192	0.4%	2.8%	No	YES	
US 101	Woodside to Whipple	AM	E	F	Y	3	3	69	69	56	5	0.8%	0.1%	No	No	
		PM	F	F	Y	3	3	69	69	7	55	0.1%	0.8%	No	No	
SR 84	University to Alameda Co. Line	AM	A	F	N	3	3	69	69	7	80	0.1%	1.2%	No	YES	
		PM	F	A	N	3	3	69	69	79	10	1.1%	0.1%	YES	No	
I-280	Saratoga to Lawrence	AM	F	D	Y	3	3	69	69	160	13	2.3%	0.2%	YES	No	
		PM	D	E	Y	3	3	69	69	20	157	0.3%	2.3%	No	YES	
I-680	SR 237 to Jacklin	AM	E	D	N	3	3	69	69	12	141	0.2%	2.0%	No	YES	
		PM	F	D	N	3	3	69	69	139	18	2.0%	0.3%	YES	No	
I-680	Scott Creek to SR 238	AM	N/A	N/A	N	3	3	69	69	11	131	0.2%	1.9%	No	YES	
		PM	D	A	N	3	3	69	69	130	17	1.9%	0.2%	YES	No	
I-680	SR 84 to Bernal	AM	N/A	N/A	N	3	3	69	69	10	124	0.1%	1.8%	No	YES	
		PM	B	A	N	3	3	69	69	122	16	1.8%	0.2%	YES	No	
I-680	I-580 to Alcosta	AM	N/A	N/A	N	3	3	69	69	4	53	0.1%	0.8%	No	No	
		PM	A	A	N	3	3	69	69	52	7	0.8%	0.1%	No	No	
I-580	I-205 to SR 84/1st	AM	N/A	N/A	N	4	4	92	92	4	48	0.0%	0.5%	No	No	
		PM	C	A	N	4	4	92	92	47	6	0.5%	0.1%	No	No	
I-580	Santa Rita to I-680	AM	N/A	N/A	N	4	4	92	92	5	61	0.1%	0.7%	No	No	
		PM	F	A	N	4	4	92	92	60	8	0.6%	0.1%	No	No	
I-880	SR 237 to Dixon	AM	D	D	N	3	3	69	69	12	143	0.2%	2.1%	No	YES	
		PM	F	D	N	3	3	69	69	141	18	2.0%	0.3%	YES	No	
I-880	Alv.-Niles to Tennyson	AM	N/A	N/A	N	4	4	92	92	25	300	0.3%	3.3%	No	YES	
		PM	F	B	N	4	4	92	92	296	38	3.2%	0.4%	YES	No	
SR 237	Zanker to McCarthy	AM	D	F	Y	3	3	69	69	23	271	0.3%	3.9%	No	YES	
		PM	F	D	Y	3	3	69	69	267	34	3.9%	0.5%	YES	No	
SR 237	FairOaks to Lawrence	AM	D	D	Y	2	2	44	44	24	287	0.5%	6.5%	No	YES	
		PM	C	D	Y	2	2	44	44	283	36	6.4%	0.8%	YES	No	

Notes:

¹ Sources: Density-based LOS from VTA 2000 CMP Monitoring Data, Alameda County CMP 2000 LOS Monitoring Report, and San Mateo County CMP 1999 Monitoring Report.

² Capacity assumes 2,300 vehicles per hour per lane (vphpl) for six- or more lane freeways and 2,200 vphpl for four-lane freeways (auxiliary lanes are not included).

Significant and potentially significant impacts are indicated in bold.

Table C-4
Freeway Segment Analysis-Alternative 5 (External Locations)

Freeway Segment	Peak Hour	Existing LOS		Incl. HOV in 2013?	Mixed-Flow Lanes		1% of Capacity		Project Trips		% of Capacity		Potentially Significant Impact?		
		NB/EB	SB/WB		NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	
SR 85	Homestead to Fremont	AM	F	D	Y	2	2	44	44	120	9	2.7%	0.2%	YES	No
		PM	D	E	Y	2	2	44	44	11	124	0.3%	2.8%	No	YES
SR 85	Winchester to Saratoga	AM	F	D	Y	2	2	44	44	60	5	1.4%	0.1%	YES	No
		PM	D	F	Y	2	2	44	44	6	62	0.1%	1.4%	No	YES
SR 85	Almaden to Camden	AM	E	D	Y	2	2	44	44	30	2	0.7%	0.1%	No	No
		PM	D	D	Y	2	2	44	44	3	31	0.1%	0.7%	No	No
SR 17	Bear Creek to SR 9	AM	F	C	N	2	2	44	44	14	1	0.3%	0.0%	No	No
		PM	C	F	N	2	2	44	44	1	15	0.0%	0.3%	No	No
SR 87	Curtner to Almaden	AM	F	C	Y	2	2	44	44	18	1	0.4%	0.0%	No	No
		PM	D	F	Y	2	2	44	44	2	19	0.0%	0.4%	No	No
SR 87	Julian to Taylor	AM	F	B	Y	2	2	44	44	48	4	1.1%	0.1%	YES	No
		PM	C	D	Y	2	2	44	44	4	50	0.1%	1.1%	No	YES
US 101	Cochrane to Scheller	AM	F	C	N	3	3	69	69	14	1	0.2%	0.0%	No	No
		PM	D	D	N	3	3	69	69	1	15	0.0%	0.2%	No	No
US 101	Tully to Story	AM	F	C	Y	3	3	69	69	48	4	0.7%	0.1%	No	No
		PM	D	F	Y	3	3	69	69	4	50	0.1%	0.7%	No	No
US 101	McKee to Old Oakland	AM	F	C	Y	3	3	69	69	96	7	1.4%	0.1%	YES	No
		PM	C	E	Y	3	3	69	69	9	99	0.1%	1.4%	No	YES
US 101	DeLaCruz to Montague	AM	E	D	Y	3	3	69	69	120	9	1.7%	0.1%	YES	No
		PM	D	F	Y	3	3	69	69	11	124	0.2%	1.8%	No	YES
US 101	Oregon/Embarcadero to University	AM	F	F	Y	3	3	69	69	73	6	1.1%	0.1%	YES	No
		PM	F	F	Y	3	3	69	69	7	76	0.1%	1.1%	No	YES
US 101	Woodside to Whipple	AM	E	F	Y	3	3	69	69	21	2	0.3%	0.0%	No	No
		PM	F	F	Y	3	3	69	69	2	22	0.0%	0.3%	No	No
SR 84	University to Alameda Co. Line	AM	A	F	N	3	3	69	69	2	30	0.0%	0.4%	No	No
		PM	F	A	N	3	3	69	69	31	3	0.5%	0.0%	No	No
I-280	Saratoga to Lawrence	AM	F	D	Y	3	3	69	69	60	5	0.9%	0.1%	No	No
		PM	D	E	Y	3	3	69	69	6	62	0.1%	0.9%	No	No
I-680	SR 237 to Jacklin	AM	E	D	N	3	3	69	69	4	53	0.1%	0.8%	No	No
		PM	F	D	N	3	3	69	69	55	5	0.8%	0.1%	No	No
I-680	Scott Creek to SR 238	AM	N/A	N/A	N	3	3	69	69	4	49	0.1%	0.7%	No	No
		PM	D	A	N	3	3	69	69	51	5	0.7%	0.1%	No	No
I-680	SR 84 to Bernal	AM	N/A	N/A	N	3	3	69	69	4	46	0.1%	0.7%	No	No
		PM	B	A	N	3	3	69	69	48	4	0.7%	0.1%	No	No
I-680	I-580 to Alcosta	AM	N/A	N/A	N	3	3	69	69	2	20	0.0%	0.3%	No	No
		PM	A	A	N	3	3	69	69	20	2	0.3%	0.0%	No	No
I-580	I-205 to SR 84/1st	AM	N/A	N/A	N	4	4	92	92	1	18	0.0%	0.2%	No	No
		PM	C	A	N	4	4	92	92	19	2	0.2%	0.0%	No	No
I-580	Santa Rita to I-680	AM	N/A	N/A	N	4	4	92	92	2	23	0.0%	0.2%	No	No
		PM	F	A	N	4	4	92	92	24	2	0.3%	0.0%	No	No
I-880	SR 237 to Dixon	AM	D	D	N	3	3	69	69	4	54	0.1%	0.8%	No	No
		PM	F	D	N	3	3	69	69	56	5	0.8%	0.1%	No	No
I-880	Alv.-Niles to Tennyson	AM	N/A	N/A	N	4	4	92	92	9	113	0.1%	1.2%	No	YES
		PM	F	B	N	4	4	92	92	117	10	1.3%	0.1%	YES	No
SR 237	Zanker to McCarthy	AM	D	F	Y	3	3	69	69	8	102	0.1%	1.5%	No	YES
		PM	F	D	Y	3	3	69	69	106	9	1.5%	0.1%	YES	No
SR 237	FairOaks to Lawrence	AM	D	D	Y	2	2	44	44	8	108	0.2%	2.4%	No	YES
		PM	C	D	Y	2	2	44	44	112	10	2.5%	0.2%	YES	No

Notes:

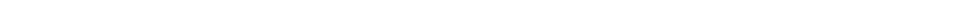
¹ Sources: Density-based LOS from VTA 2000 CMP Monitoring Data, Alameda County CMP 2000 LOS Monitoring Report, and San Mateo County CMP 1999 Monitoring Report.

² Capacity assumes 2,300 vehicles per hour per lane (vphpl) for six- or more lane freeways and 2,200 vphpl for four-lane freeways (auxiliary lanes are not included).

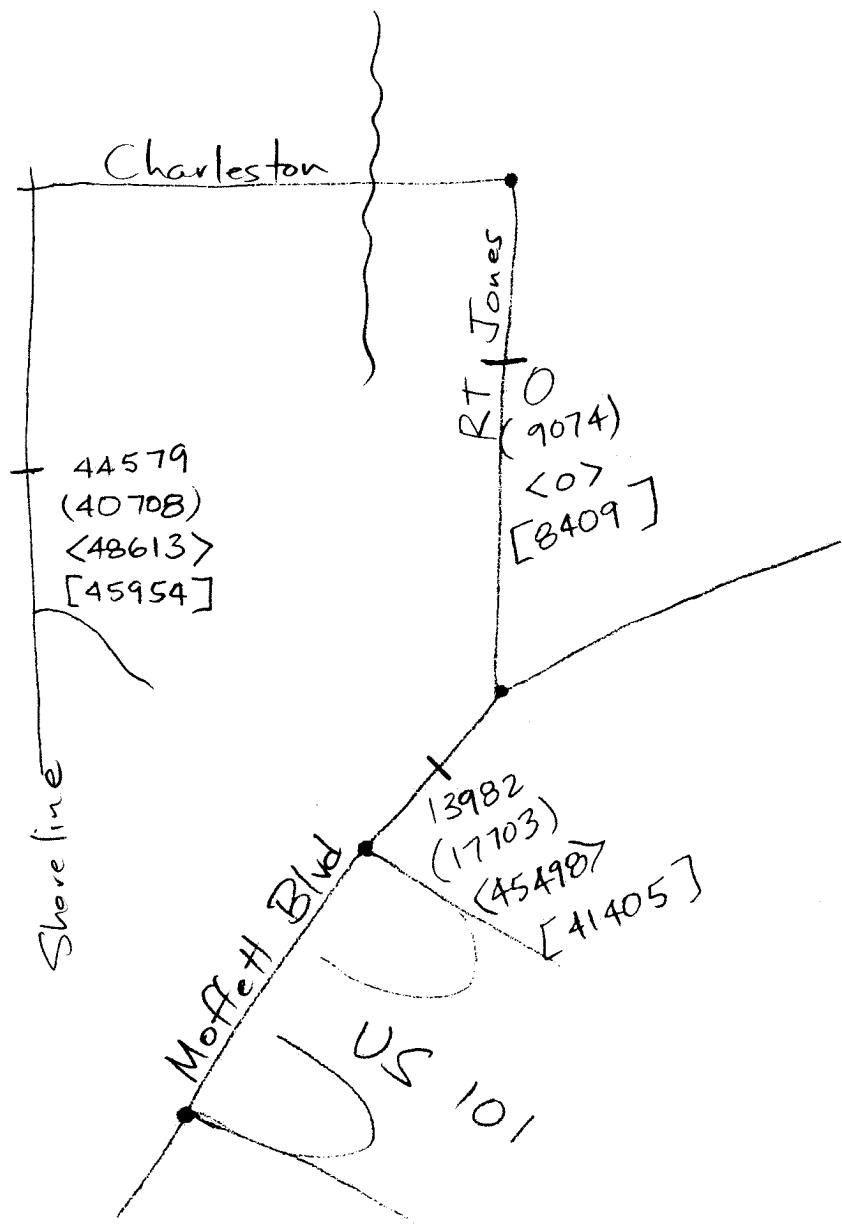
Significant and potentially significant impacts are indicated in bold.

A P P E N D I X B 5

CHARLESTON BRIDGE MODEL
VOLUMES



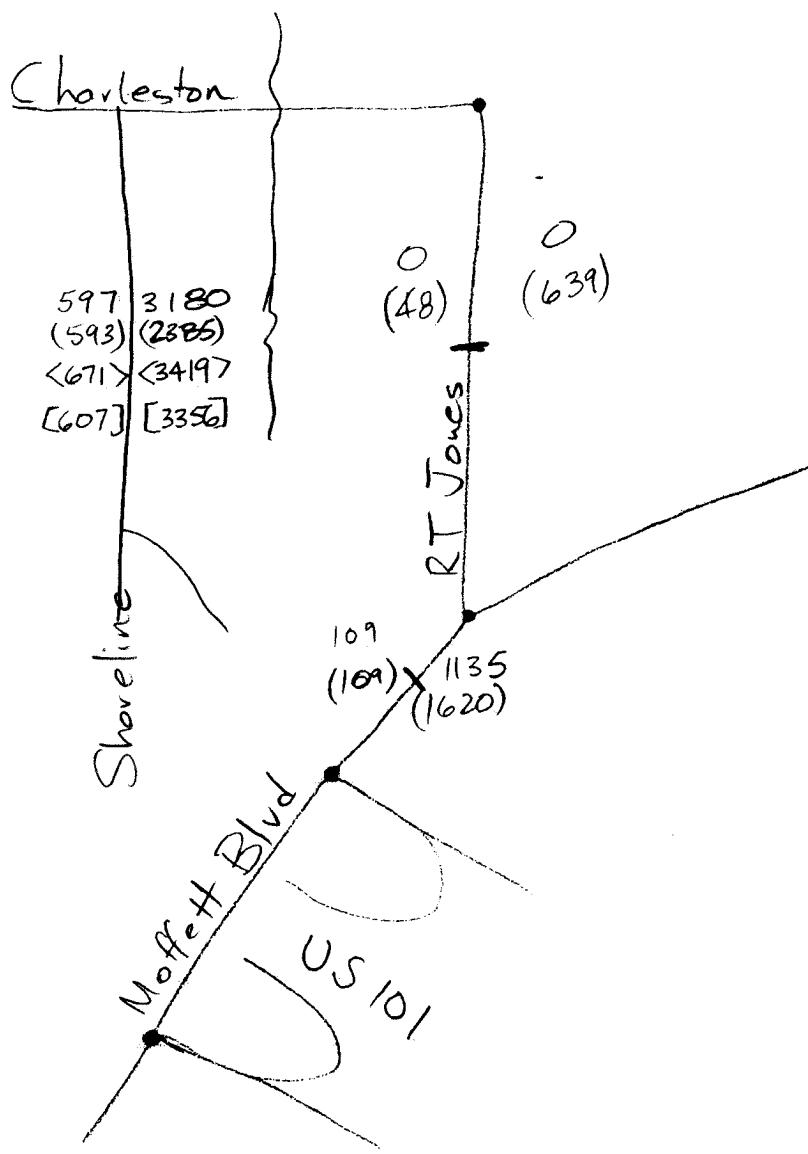
6-21-01



Daily

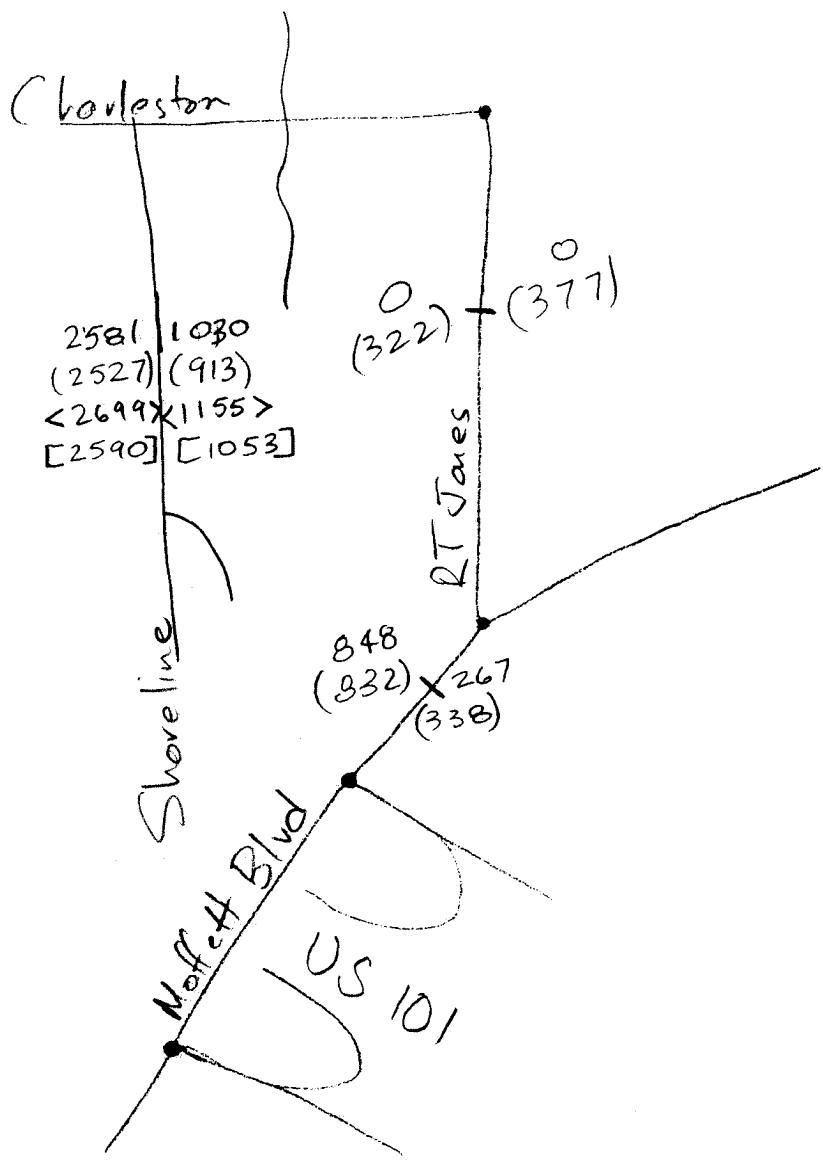
2010 No Proj No Bridge
(2010 No Proj w/ Bridge)
<Alt 5 No Bridge>
[Alt 5 w/ Bridge]

Based on 2010 MVRP
Mountain View model
runs w/ upgraded
US 101/SR 85 interchange.



AM Peak

2010 No Proj No Bridge
(2010 No Proj w/ Bridge)
<Alt 5 No Br. dge>
[Alt 5 w/ Bridge]



PM	Peak Hr
2010 No Proj	No Bridge
(2010 No Proj)	w/ Bridge
<Alt 5	No Bridge
[Alt 5]	w/ Bridge

A P P E N D I X B 6

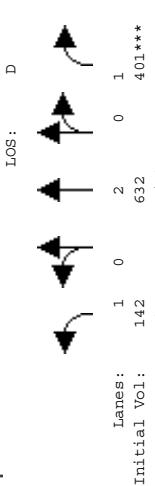
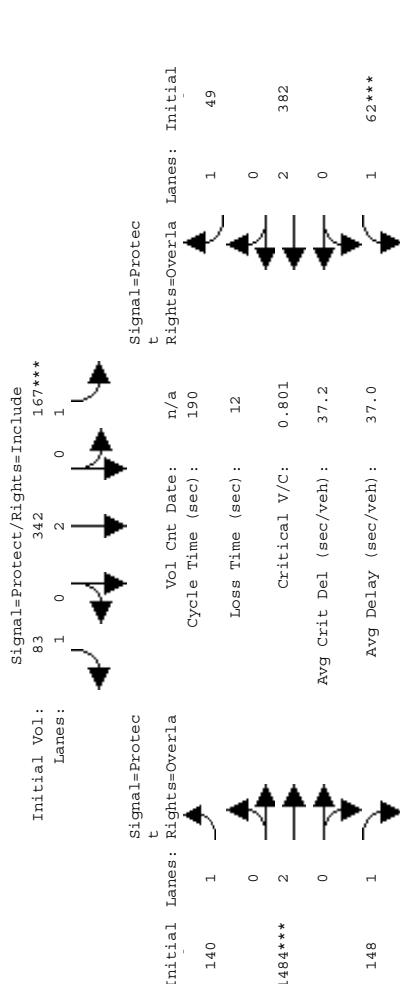
LEVEL OF SERVICE CALCULATIONS:
ALTERNATIVE 2
(INCLUDES ALTERNATIVE 1 / BASLINE)



Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM Peak

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1

Intersection #1: Middlefield/Shoreline

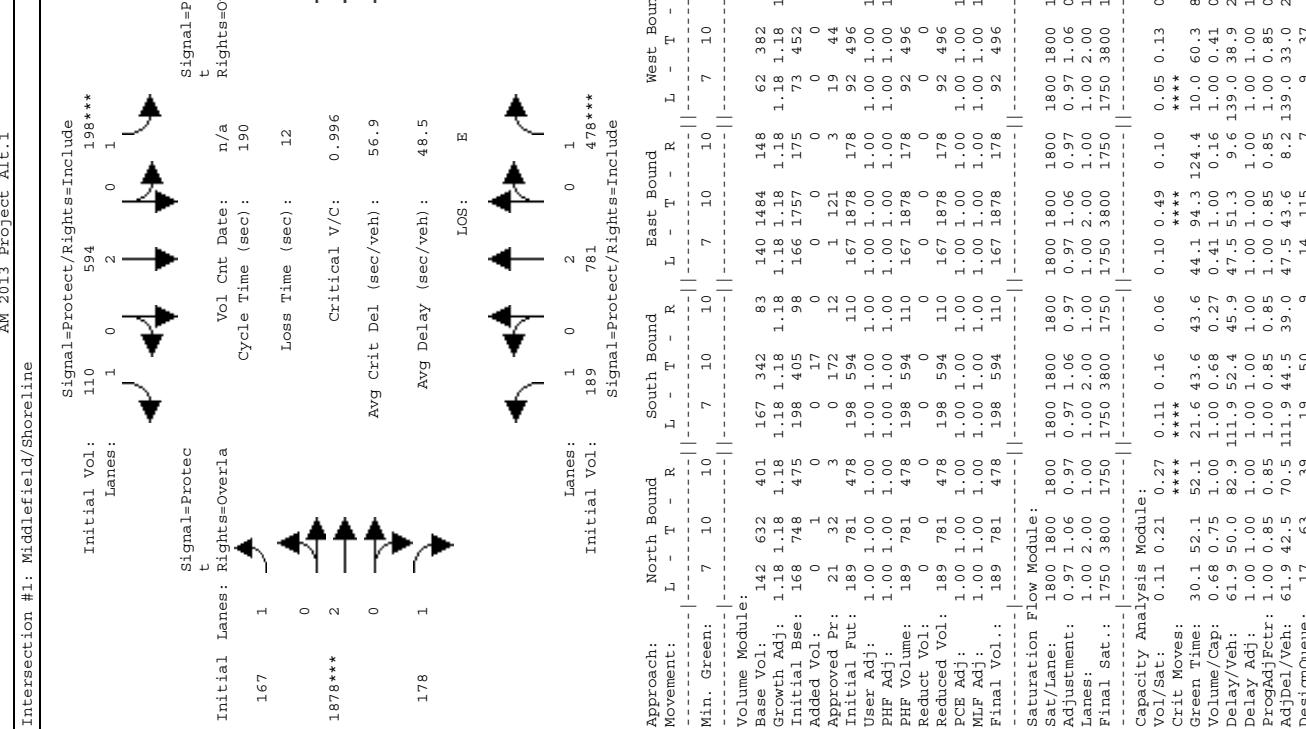


Capacity Analysis Module:
Vol/Sat: 0.08 0.17 0.23 0.10 0.09 0.05 0.08 0.39 0.08 0.04 0.10 0.03
Crit Moves: *** 40.5 44.8 92.6 129.1 8.4 56.3 78.9
Green Time: 36.5 54.3 22.6 40.5 40.5 0.97 1.06 0.97 1.06 0.97 1.06 0.97
Volume/Cap: 0.4 0.2 0.58 0.80 0.80 0.42 0.22 0.34 0.80 0.12 0.80 0.34
Delay/Veh: 51.8 44.7 75.1 49.4 47.0 46.1 33.0 8.1 96.6 39.8 25.4
ProgAdjFctr: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 51.8 38.0 45.9 75.1 42.0 39.9 46.1 28.0 6.9 96.6 33.9 21.6
DesigndQueue: 12 50 32 16 29 7 12 90 5 6 29 3

Saturation Flow Module:
Sat/Lane: 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800
Adjustment: 0.97 1.06 0.97 1.06 0.97 1.06 0.97 1.06 0.97 1.06 0.97 1.06
Lanes: 1.00 2.00 1.00 2.00 1.00 2.00 1.00 2.00 1.00 2.00 1.00 2.00
Final Sat.: 1750 3800 1750 3800 1750 3800 1750 3800 1750 3800 1750 3800
-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

Approach: North Bound South Bound East Bound West Bound
Movement: | L - T - R | L - T - R | L - T - R | L - T - R |
Min. Green: 7 10 10 10 10 10 10 10 10 10 10 10 |-----|

	Initial Vol:	Lanes:	Vol Cnt Date:	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):	LOS:	E		
Approach:	North Bound	South Bound	East Bound	West Bound								
Movement:	L - T - R	L - T - R	L - T - R	L - T - R								
Min. Green:	7	10	10	10	7	10	10	10	7	10		
Volume Module:												
Base Vol:	142	632	401	167	342	83	140	1484	148	62	382	49
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bee:	142	632	401	167	342	83	140	1484	148	62	382	49
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Pastorial Fut:	0	0	0	0	0	0	0	0	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	142	632	401	167	342	83	140	1484	148	62	382	49
Reducit Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	142	632	401	167	342	83	140	1484	148	62	382	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	142	632	401	167	342	83	140	1484	148	62	382	49
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	1.06	0.97	1.06	0.97	1.06	0.97	1.06	0.97	1.06
Lanes:	1.00	2.00	1.00	2.00	1.00	2.00	1.00	2.00	1.00	2.00	1.00	2.00
Final Sat.:	1750	3800	1750	3800	1750	3800	1750	3800	1750	3800	1750	3800
----- ----- ----- ----- ----- ----- ----- ----- ----- ----- ----- -----												
Capacity Analysis Module:												
Vol/Sat:	0.08	0.17	0.23	0.10	0.09	0.05	0.08	0.39	0.08	0.04	0.10	0.03
Crit Moves:	***	40.5	44.8	92.6	129.1	8.4	56.3	78.9	78.9	78.9	78.9	78.9
Green Time:	36.5	54.3	22.6	40.5	40.5	0.97	1.06	0.97	1.06	0.97	1.06	0.97
Volume/Cap:	0.4	0.2	0.58	0.80	0.80	0.42	0.22	0.34	0.80	0.12	0.80	0.34
Delay/Veh:	51.8	44.7	75.1	49.4	47.0	46.1	33.0	8.1	96.6	39.8	25.4	25.4
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.8	38.0	45.9	75.1	42.0	39.9	46.1	28.0	6.9	96.6	33.9	21.6
DesigndQueue:	12	50	32	16	29	7	12	90	5	6	29	3



Level Of Service Computation Report
HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 2

Level Of Service Computation Report
 85 HCM Operations (Future Volume Alternative)
 AM Peak

Diagram illustrating traffic signal timing and lane usage for two cycles:

Initial Vol: 110 **Lanes:** 1 0 **Signal=Protect/Rights=Inclde**

Initial Vol: 167 **Lanes:** 1 0 **Signal=Protect**

Initial Vol: 1878*** **Lanes:** 2 0 **Signal=Protect**

Initial Vol: 178 **Lanes:** 1 0 **Signal=Protect**

Vol Cnt Date: n/a **Cycle Time (sec):** 190 **Loss Time (sec):** 12 **Critical V/C:** 0.996 **Avg Crit Del (sec/veh):** 56.9 **Avg Delay (sec/veh):** 48.6

Initial Vol: 110 **Lanes:** 0 1 **Signal=Protect/Rights=Overla**

Initial Vol: 167 **Lanes:** 1 0 **Signal=Protect/Rights=Overla**

Initial Vol: 1878*** **Lanes:** 2 0 **Signal=Protect/Rights=Overla**

Initial Vol: 178 **Lanes:** 1 0 **Signal=Protect/Rights=Overla**

Initial Vol: 110 **Lanes:** 0 1 **Signal=Protect/Rights=Inclde**

Initial Vol: 167 **Lanes:** 1 0 **Signal=Protect**

Initial Vol: 1878*** **Lanes:** 2 0 **Signal=Protect**

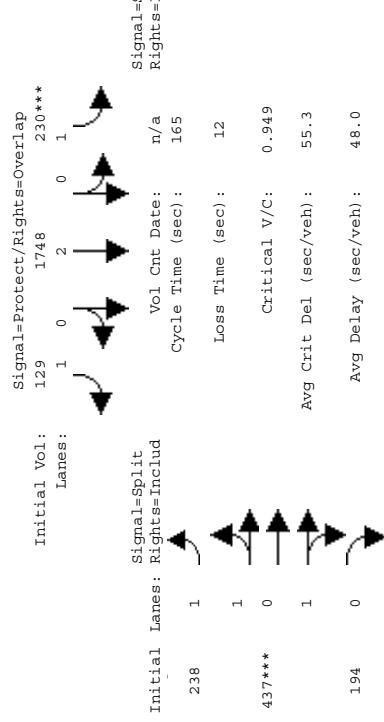
Initial Vol: 178 **Lanes:** 1 0 **Signal=Protect**

Level Of Service Computation Report
85 HCM Operations (Future Volume Alternative)
AM Peak

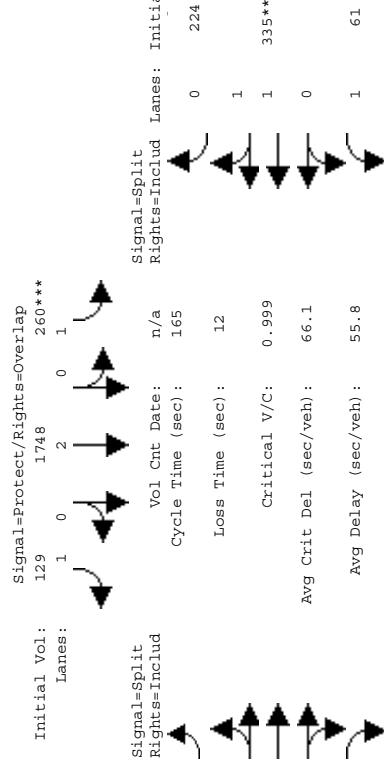
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 2

Intersection #2: Moffett/Central Expressway



Intersection #2: Moffett/Central Expressway



Capacity Analysis Module:

Capacity Analysis Module:	0.10	0.44	0.09	0.13	0.46	0.07	0.14	0.17	0.03	0.14	0.14	0.46	0.07	0.14	0.19	0.19	0.03	0.15	0.15	
Crit Moves: ****																				
Green Time:	174	75.7	100.5	22.9	81.2	110.9	29.7	29.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	25.0	25.0	
Volume/Cap:	0.93	0.95	0.15	0.95	0.93	0.11	0.76	0.95	0.95	0.22	0.95	0.95	0.22	0.95	0.95	0.17	0.95	0.11	0.23	0.10
Delay/Veh:	8.9	9.41	1.0	8.5	3.6	8	7.3	50.9	64.4	64.4	46.9	71.8	7.2	48.7	72.9	46.9	82.1	82.1	82.1	
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
AddDel/Veh:	8.9	9.41	1.0	8.5	3.6	8	7.3	50.9	64.4	64.4	46.9	71.8	7.2	48.7	72.9	46.9	82.1	82.1	82.1	
Designdqueue:	14	93	6	19	93	4	19	34	15	5	25	17	4	18	40	15	5	27	18	

Capacity Analysis Module:

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	14 10 10	14 10 10	14 10 10	14 10 10
Volume Module:	115 1294	136 149 1178	88 198 271	89 49 193
Base Vol:	115 1294	136 149 1178	88 198 271	89 49 193
Growth Adj:	1.18 1.18	1.18 1.18	1.18 1.18	1.18 1.18
Initial Bee:	136 1532	161 176 1395	104 234 321	161 176 1395
Added Vol:	0 0	2 17	0 41	0 4
Approved Pr:	36 122	0 37 353	25 4 75	89 30 7
Initial Fut:	172 1654	163 230 1748	129 238 437	194 58 312
User Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Volume:	172 1654	163 230 1748	129 238 437	194 58 312
Reducit Vol:	0 0	0 0	0 0	0 0
Reduced Vol:	172 1654	163 230 1748	129 238 437	194 58 312
PCE Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
MLF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
Final Vol.:	172 1654	163 230 1748	129 238 437	194 58 312
Saturation Flow Module:	1800 1800	1800 1800	1800 1800	1800 1800
Adj/Lane:	0.97 1.06	0.97 1.06	0.97 1.04	1.00 0.95
Lanes:	1.00 2.00	1.00 2.00	1.00 1.37	0.63 1.16
Final Sat.:	1750 3800	1750 3800	1750 2562	1137 1505
Capacity Analysis Module:	0.10 0.44	0.09 0.13	0.46 0.07	0.14 0.17
Vol/Sat:	0.10	0.44	0.10	0.15 0.46
Crit Moves:	****	****	****	****
Green Time:	17.0	71.9	24.5	79.5 111.0
Volume/Cap:	0.96	1.00	0.17	1.00 0.96
Delay/Veh:	95.4	52.1	11.9	95.9 40.2
Delay Adj:	1.00	1.00	1.00	1.00 1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00 1.00
AddDel/Veh:	95.4	52.1	11.9	95.9 40.2
Designdqueue:	14	97	7	21 95

Capacity Analysis Module:

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	14 10 10	14 10 10	14 10 10	14 10 10
Volume Module:	115 1294	136 149 1178	88 198 271	89 49 193
Base Vol:	115 1294	136 149 1178	88 198 271	89 49 193
Growth Adj:	1.18 1.18	1.18 1.18	1.18 1.18	1.18 1.18
Initial Bee:	136 1532	161 176 1395	104 234 321	161 176 1395
Added Vol:	0 0	2 17	0 41	0 4
Approved Pr:	36 122	0 37 353	25 4 75	89 30 7
Initial Fut:	172 1654	163 230 1748	129 238 437	194 58 312
User Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Volume:	172 1654	163 230 1748	129 238 437	194 58 312
Reducit Vol:	0 0	0 0	0 0	0 0
Reduced Vol:	172 1654	163 230 1748	129 238 437	194 58 312
PCE Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
MLF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
Final Vol.:	172 1654	163 230 1748	129 238 437	194 58 312
Saturation Flow Module:	1800 1800	1800 1800	1800 1800	1800 1800
Adj/Lane:	0.97 1.06	0.97 1.06	0.97 1.04	1.00 0.95
Lanes:	1.00 2.00	1.00 2.00	1.00 1.37	0.63 1.16
Final Sat.:	1750 3800	1750 3800	1750 2562	1137 1505
Capacity Analysis Module:	0.10 0.44	0.09 0.13	0.46 0.07	0.14 0.17
Vol/Sat:	0.10	0.44	0.10	0.15 0.46
Crit Moves:	****	****	****	****
Green Time:	17.0	71.9	24.5	79.5 111.0
Volume/Cap:	0.96	1.00	0.17	1.00 0.96
Delay/Veh:	95.4	52.1	11.9	95.9 40.2
Delay Adj:	1.00	1.00	1.00	1.00 1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00 1.00
AddDel/Veh:	95.4	52.1	11.9	95.9 40.2
Designdqueue:	14	97	7	21 95

Level Of Service Computation Report
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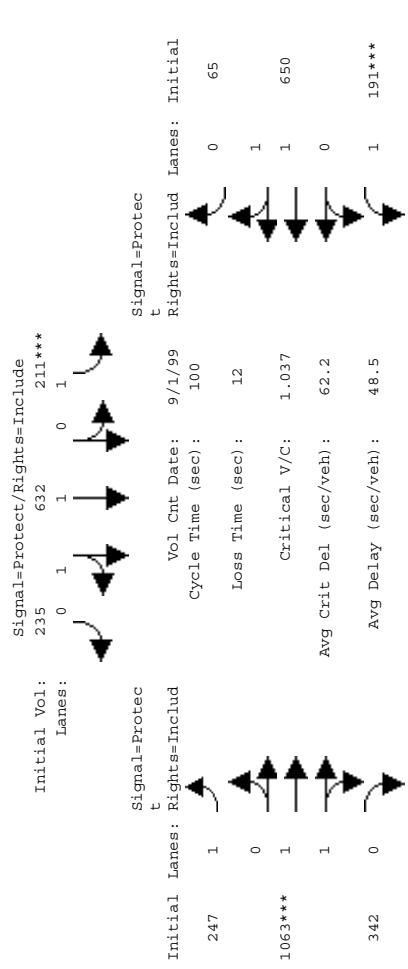
Level Of Service Computation Report
 5 HCM Operations (Future Volume Alternative)
 AM 2013 Project Alt. 1

Intersection #3: Moffatt/Middlefield

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 2

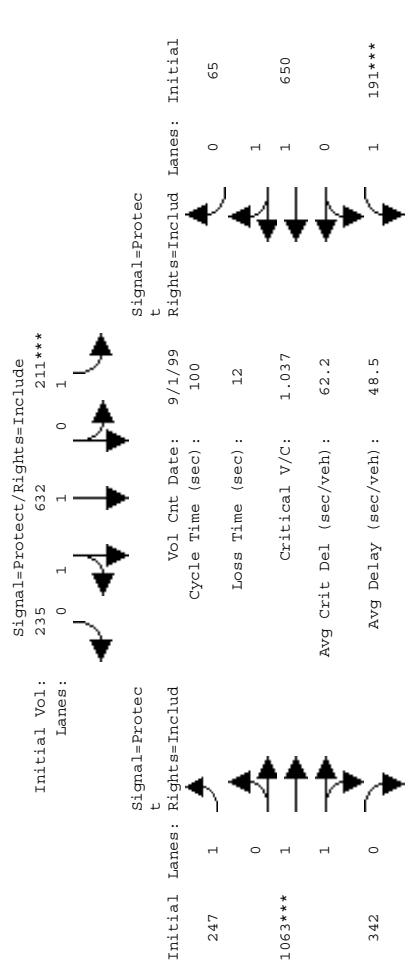
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM Peak

Intersection #3: Moffett/Middlefield



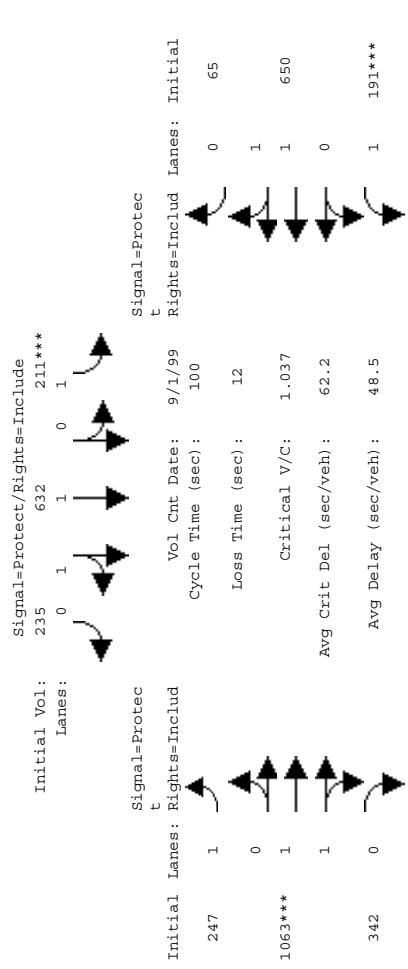
Volume Module:	>> Count Date: 1 Sep 1999 <<											
Base Vol:	111	248	387	145	375	181	206	770	175	147	500	47
Growth Adj:	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18
Initial Bee:	131	294	458	172	444	214	244	912	207	174	592	56
Added Vol:	6	2	72	39	8	0	147	30	17	34	9	
Approved Pr:	40	32	0	180	21	3	4	105	0	24	0	
Initial Fut:	177	328	530	211	632	235	247	1063	342	191	650	65
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:												
PHF Volume:	177	328	530	211	632	235	247	1063	342	191	650	65
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	177	328	530	211	632	235	247	1063	342	191	650	65
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.971.06	0.97	1.04	1.00	0.97	1.04	1.00	0.97	1.03	1.00	0.97	1.06
Lanes:	1.00	1.00	1.00	1.44	0.56	1.00	1.50	0.50	1.00	1.81	0.19	
Final Sat.:	1750	1900	1750	2656	1003	1750	2799	900	1750	3363	336	
Capacity Analysis Module:												
Vol/Sat:	0.10	0.17	0.30	0.12	0.23	0.23	0.14	0.38	0.38	0.11	0.19	0.19
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	12.3	29.2	29.2	11.6	28.5	28.5	19.9	36.6	36.6	10.5	27.3	27.3
Volume/Cap:	0.82	0.59	1.04	1.04	0.82	0.82	0.71	1.04	1.04	0.71	0.71	
Delay/Veh:	1.3	23.5	61.4	94.1	29.1	29.1	32.9	53.1	53.1	97.2	26.6	26.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFcrr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Addl/Veh:	47.1	23.5	61.4	94.1	29.1	29.1	32.9	53.1	53.1	97.2	26.6	26.6
DesignQueue:	9	14	22	11	27	10	11	42	13	10	28	3

Intersection #4: Moffett/85 NB Ramp



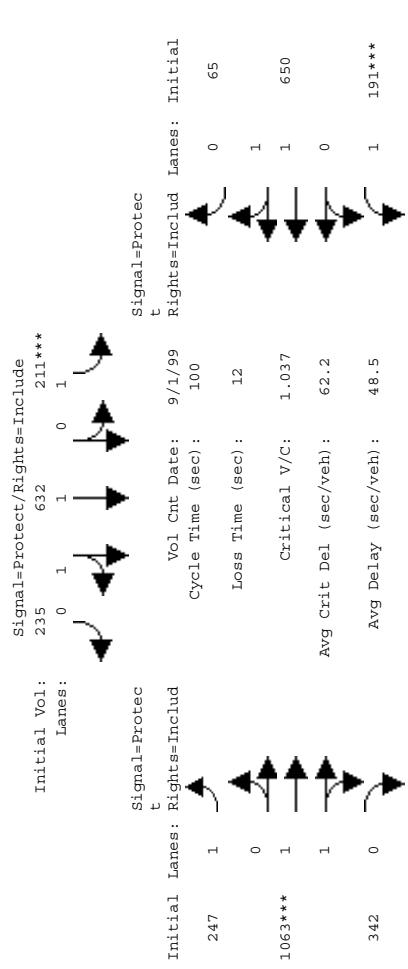
Approach:	North Bound	South Bound	East Bound	West Bound
Initial Vol:	247	1	0	
Lanes:	0	1	1	
Vol Cnt Date:	9/1/99	9/1/99	9/1/99	
Cycle Time (sec):	100	65	65	
Loss Time (sec):	12	1	1	
Critical V/C:	1.037			
Avg Crit Del (sec/veh):	62.2			
Avg Delay (sec/veh):	48.5			
LOS:	E			

Intersection #4: Moffett/85 NB Ramp



Approach:	North Bound	South Bound	East Bound	West Bound
Initial Vol:	526***	2		
Lanes:	0	1		
Vol Cnt Date:	9/1/99	9/1/99	9/1/99	
Cycle Time (sec):	100	65	65	
Loss Time (sec):	12	1	1	
Critical V/C:	0.478			
Avg Crit Del (sec/veh):	9.4			
Avg Delay (sec/veh):	9.8			
LOS:	B			

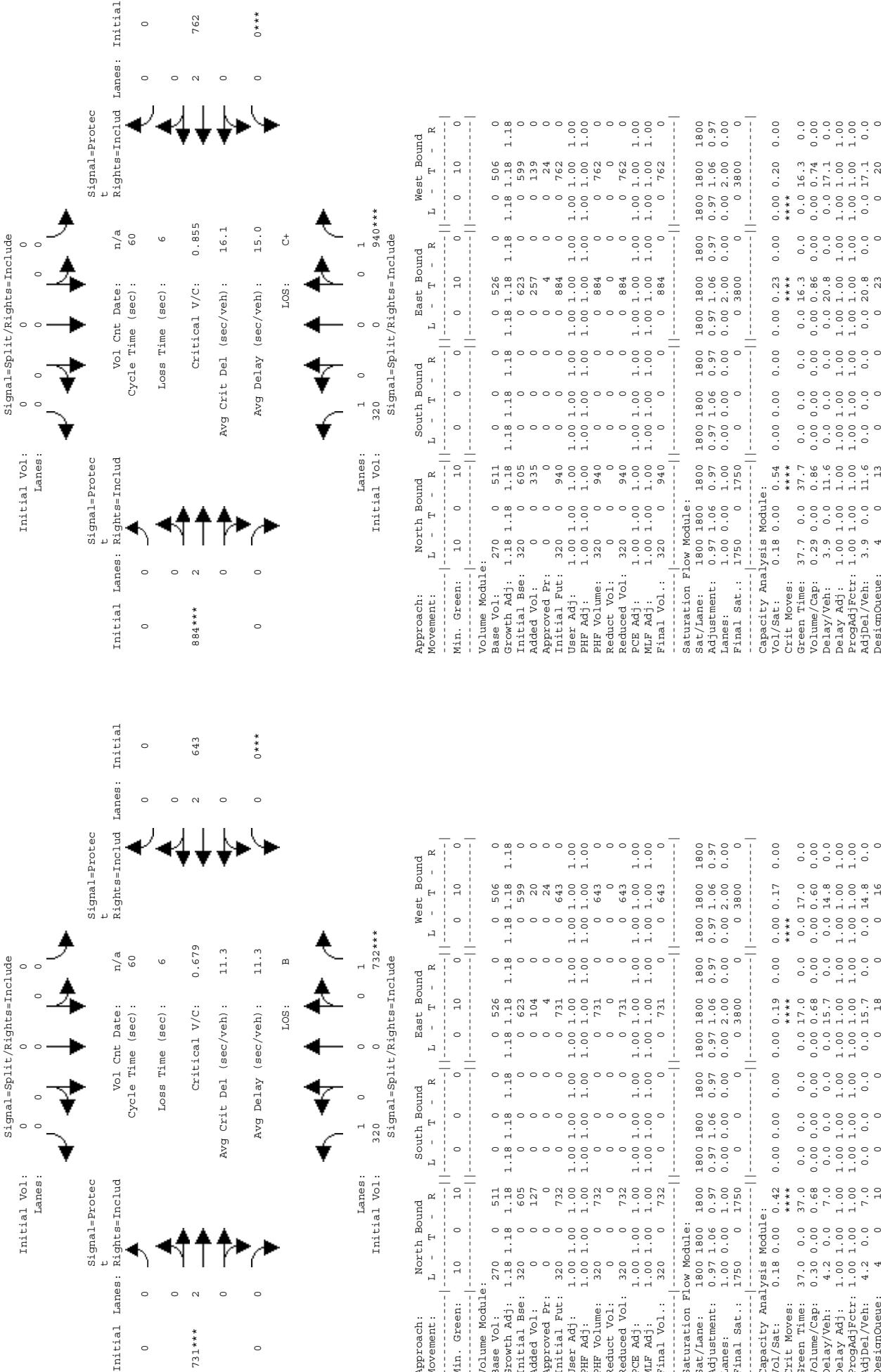
Intersection #4: Moffett/85 NB Ramp



Approach:	North Bound	South Bound	East Bound	West Bound
Initial Vol:	511***	0		
Lanes:	1	0		
Vol Cnt Date:	270	0		
Cycle Time (sec):	100	65	65	
Loss Time (sec):	12	1	1	
Critical V/C:	0.478			
Avg Crit Del (sec/veh):	9.4			
Avg Delay (sec/veh):	9.8			
LOS:	B			

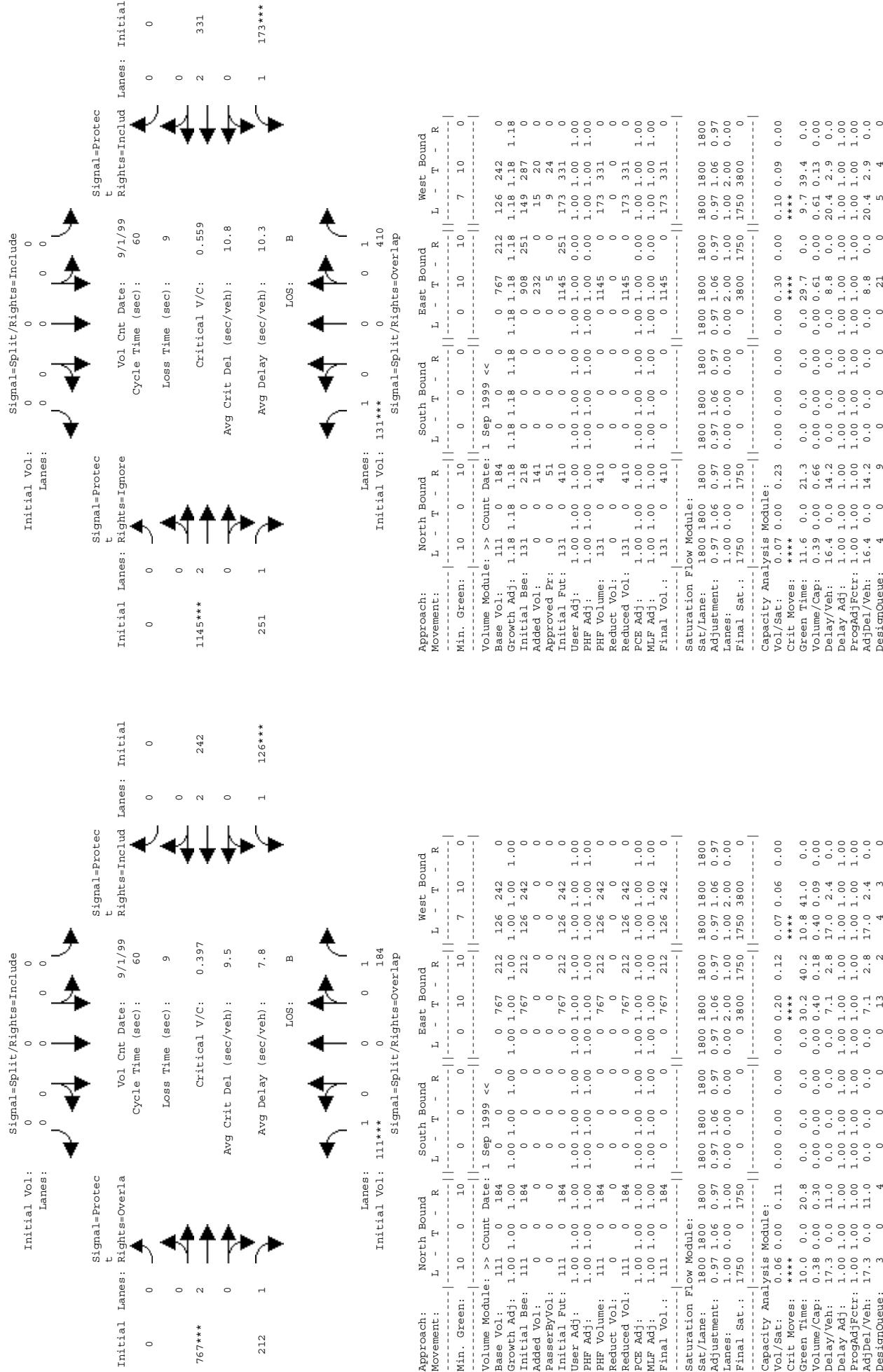
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 2



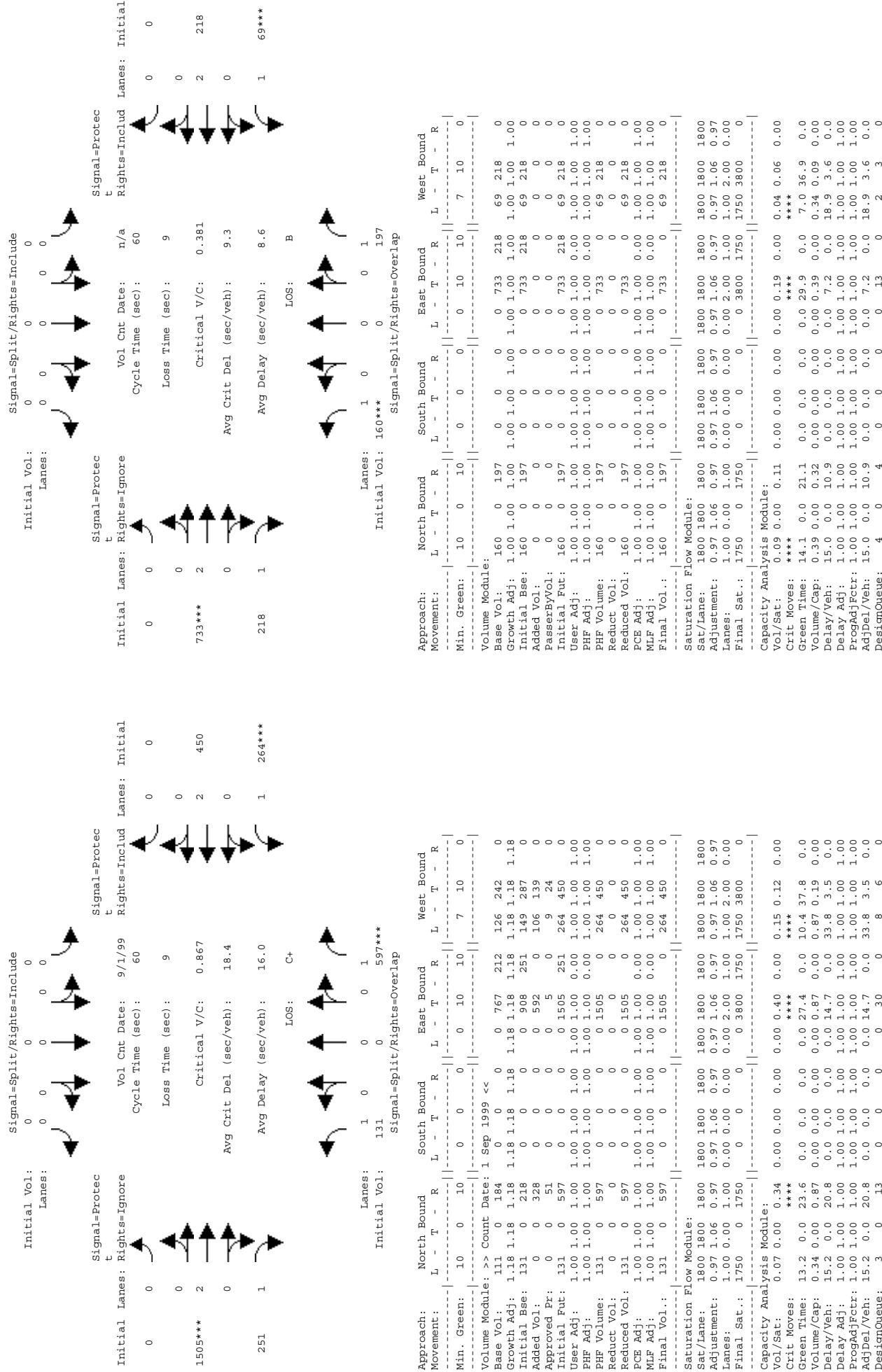
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM Peak

Intersection #5: Moffett/101 SB Ramps
Intersection #5: Moffett/101 SB Ramps
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1



Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
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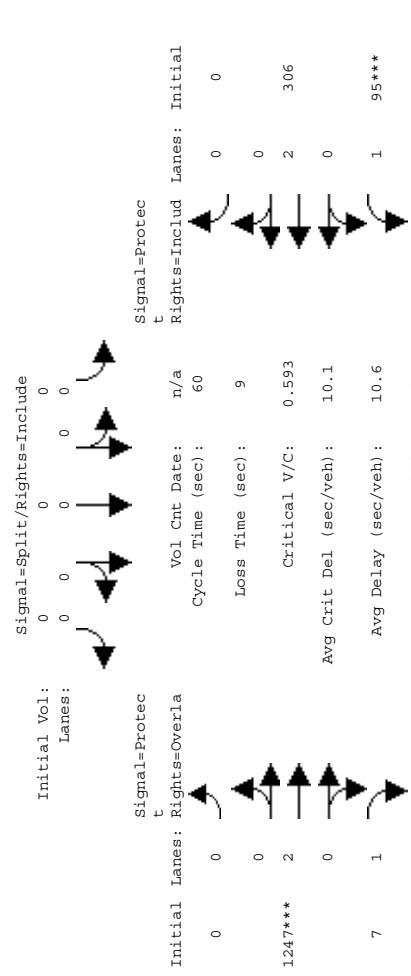
Intersection #5: Moffett/101 SB Ramps
Intersection #6: Moffett/101 NB Ramps
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)



Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
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1985 HCM Operations (Future Volume Alternative)
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Intersection #6: Moffett/101 NB Ramps
Intersection #6: Moffett/101 NB Ramps



Initial Vol:
Lanes:
Signal=Split/Rights=Overlap
Vol Cnt Date:
Cycle Time (sec):
Loss Time (sec):
Critical V/C:
Avg Crit Del (sec/veh):
Avg Delay (sec/veh):
LOS: B

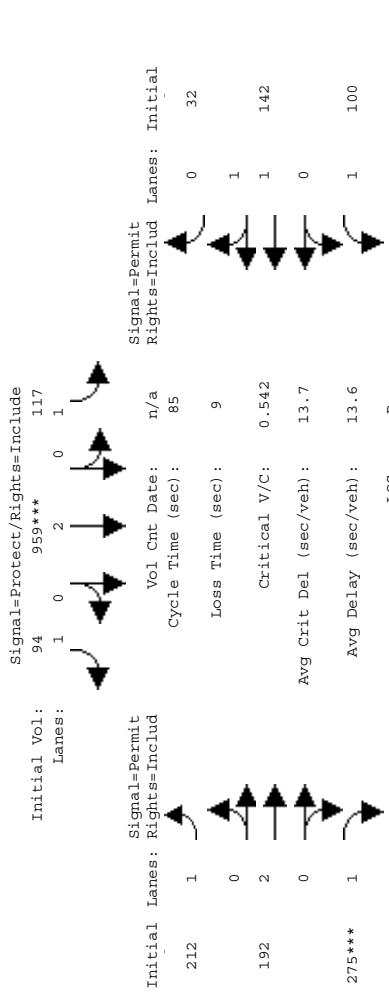
Initial Vol:
Lanes:
Signal=Split/Rights=Include
Vol Cnt Date:
Cycle Time (sec):
Loss Time (sec):
Critical V/C:
Avg Crit Del (sec/veh):
Avg Delay (sec/veh):
LOS: D

Approach:	North Bound	South Bound	East Bound	West Bound	Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	10 0 10	0 0 0	0 10 0	7 10 0	Min. Green:	10 0	0 10	0 0	7 10 0
Volume Module:									
Base Vol:	160 0	197 0	0 733	69 218 0	Base Vol:	160 0	197 0	0 733	69 218 0
Growth Adj:	1.18 1.18	1.18 1.18	1.18 1.18	1.18 1.18	Growth Adj:	1.18 1.18	1.18 1.18	1.18 1.18	1.18 1.18
Initial Bee:	189 0	233 0	0 868	82 258 0	Initial Bee:	189 0	233 0	0 868	82 258 0
Added Vol:	0 0	0 0	0 372	12 36 0	Added Vol:	0 0	0 453	0 0	920 0
Approved Pr:	24 0	14 0	0 0	7 7 0	Approved Pr:	24 0	14 0	0 0	9 7 0
Initial Fut:	213 0	424 0	0 0	0 1247 0	Initial Fut:	213 0	700 0	0 0	1795 7
User Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	User Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	PHF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Volume:	213 0	424 0	0 0	0 1247 7	PHF Volume:	213 0	700 0	0 0	1795 7
Reduced Vol:	0 0	0 0	0 0	0 0 0	Reduced Vol:	0 0	0 0	0 0	0 0 0
PCE Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	PCE Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
MLF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	MLF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
Final Vol.:	213 0	424 0	0 0	0 1247 7	Final Vol.:	213 0	700 0	0 0	1795 7
Saturation Flow Module:									
Sat/Lane:	1800 1800	1800 1800	1800 1800	1800 1800	Sat/Lane:	1800 1800	1800 1800	1800 1800	1800 1800
Adjustment:	0.97 1.06	0.97 1.06	0.97 1.06	0.97 1.06	Adjustment:	0.97 1.06	0.97 1.06	0.97 1.06	0.97 1.06
Lanes:	1.00 0.00	1.00 0.00	0.00 0.00	1.00 2.00	Lanes:	1.00 0.00	1.00 0.00	0.00 0.00	1.00 2.00
Final Sat.:	1750 0	1750 0	0 0	3800 1750	Final Sat.:	1750 0	1750 0	0 0	3800 1750
Capacity Analysis Module:									
Vol/Sat:	0.12 0.00	0.24 0.00	0.00 0.00	0.00 0.33	0.00 0.05 0.08	0.00 0.00 0.00	0.00 0.00 0.47	0.00 0.09 0.14	0.00 0.00 0.00
Crit Moves:	*****	*****	0.0 0.0	0.0 0.31	8.44 0.70	38.8 0.47	0.0 0.0	0.0 0.0	0.0 0.0
Green Time:	12.2 0.0	19.2 0.0	0.0 0.0	0.0 0.62	0.01 0.12	0.0 0.12	0.0 0.27	5.44 0.44	0.0 0.34 0.0
Volume/Cap:	0.60 0.00	0.76 0.00	0.00 0.00	0.00 0.62	0.01 0.47	0.0 0.47	0.0 0.00	0.0 0.00	0.0 0.24 0.00
Delay/Veh:	1.85 0.0	1.80 0.0	0.0 0.0	0.0 0.79	1.6 20.1	3.1 0.0	0.0 0.46	1.6 0.0	31.5 4.8 0.0
Delay Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00 1.00
ProgAdjFcrr:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00 1.00
AddJl/Veh:	18.0 0.0	18.0 0.0	0.0 0.0	0.0 0.79	1.6 20.1	3.1 0.0	0.0 0.46	1.6 0.0	31.5 4.8 0.0
DesignQueue:	6 0	10 0	0 0	0 0	3 0	4 0	0 0	37.0 0	37.0 0.8 0

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 2

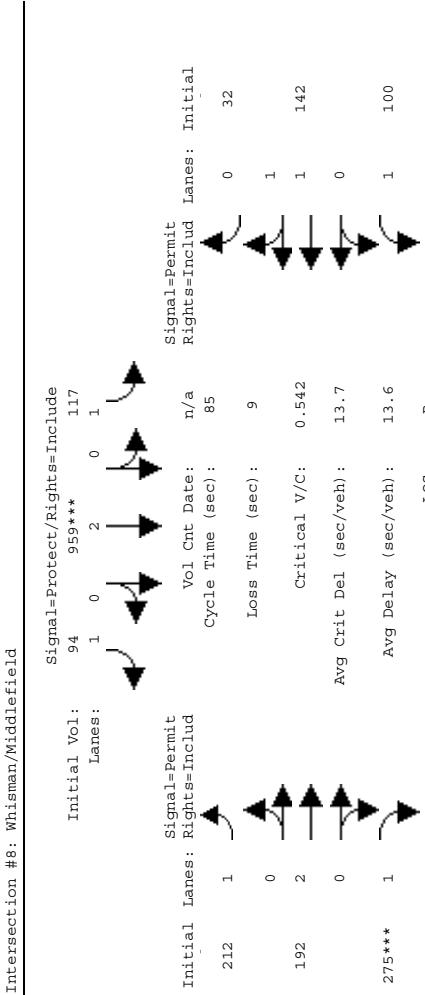
Intersection #8: Whisman/Middlefield



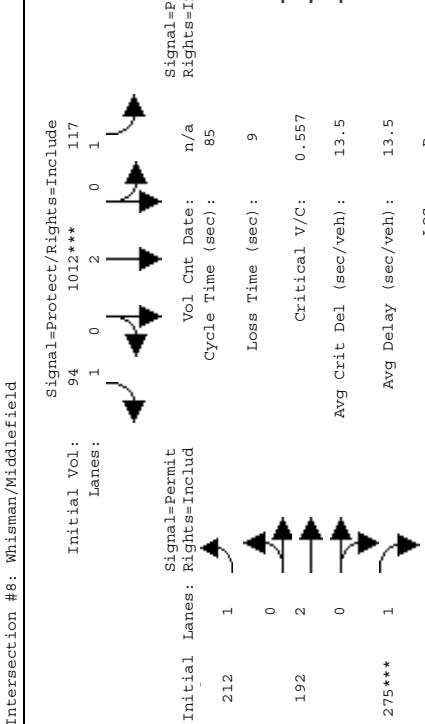
Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	7	10	7	10
Volume Module:				
Base Vol:	103	502	60	64
Growth Adj:	1.18	1.18	1.18	1.18
Initial Bce:	122	594	76	758
Added Vol:	0	27	0	0
Approved Pr:	9	164	41	199
Initial Fut:	121	673	235	117
User Adj:	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00
PHF Volume:	131	673	235	117
Reducit Vol:	0	0	0	0
Reduced Vol:	131	673	235	117
PCE Adj:	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00
Final Vol.:	131	673	235	117
Saturation Flow Module:				
Sat/Lane:	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	1.06
Lanes:	1.00	2.00	1.00	2.00
Final Sat.:	1750	3800	1750	3800
Capacity Analysis Module:				
Vol/Sat:	0.07	0.18	0.13	0.07
Crit Moves:	****	****	****	****
Green Time:	11.4	44.3	44.3	7.0
Volume/Cap:	0.54	0.34	0.26	0.81
Delay/Veh:	27.8	9	8	48.1
ProgAdjFcrt:	1.00	1.00	1.00	1.00
AddDel/Veh:	27.8	7.7	7.3	48.1
Desgnqueue:	5	16	5	5

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	7	10	7	10
Volume Module:				
Base Vol:	103	502	60	64
Growth Adj:	1.18	1.18	1.18	1.18
Initial Bce:	122	594	71	758
Added Vol:	0	79	0	55
Approved Pr:	9	164	41	164
Initial Fut:	121	725	235	117
User Adj:	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00
PHF Volume:	131	725	235	117
Reducit Vol:	0	0	0	0
Reduced Vol:	131	725	235	117
PCE Adj:	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00
Final Vol.:	131	725	235	117
Saturation Flow Module:				
Sat/Lane:	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	1.06
Lanes:	1.00	2.00	1.00	2.00
Final Sat.:	1750	3800	1750	3800
Capacity Analysis Module:				
Vol/Sat:	0.07	0.19	0.13	0.07
Crit Moves:	****	****	****	****
Green Time:	11.4	45.0	45.0	7.0
Volume/Cap:	0.56	0.36	0.25	0.81
Delay/Veh:	28.4	8.9	8.3	48.1
ProgAdjFcrt:	1.00	1.00	1.00	1.00
AddDel/Veh:	28.4	7.5	7.0	48.1
Desgnqueue:	5	17	5	5

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 2



Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	7	10	7	10
Volume Module:				
Base Vol:	103	502	60	64
Growth Adj:	1.18	1.18	1.18	1.18
Initial Bce:	122	594	71	758
Added Vol:	0	79	0	55
Approved Pr:	9	164	41	164
Initial Fut:	121	725	235	117
User Adj:	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00
PHF Volume:	131	725	235	117
Reducit Vol:	0	0	0	0
Reduced Vol:	131	725	235	117
PCE Adj:	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00
Final Vol.:	131	725	235	117
Saturation Flow Module:				
Sat/Lane:	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	1.06
Lanes:	1.00	2.00	1.00	2.00
Final Sat.:	1750	3800	1750	3800
Capacity Analysis Module:				
Vol/Sat:	0.07	0.19	0.13	0.07
Crit Moves:	****	****	****	****
Green Time:	11.4	45.0	45.0	7.0
Volume/Cap:	0.56	0.36	0.25	0.81
Delay/Veh:	28.4	8.9	8.3	48.1
ProgAdjFcrt:	1.00	1.00	1.00	1.00
AddDel/Veh:	28.4	7.5	7.0	48.1
Desgnqueue:	5	17	5	5



Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	7	10	7	10
Volume Module:				
Base Vol:	103	502	60	64
Growth Adj:	1.18	1.18	1.18	1.18
Initial Bce:	122	594	71	758
Added Vol:	0	79	0	55
Approved Pr:	9	164	41	164
Initial Fut:	121	725	235	117
User Adj:	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00
PHF Volume:	131	725	235	117
Reducit Vol:	0	0	0	0
Reduced Vol:	131	725	235	117
PCE Adj:	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00
Final Vol.:	131	725	235	117
Saturation Flow Module:				
Sat/Lane:	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	1.06
Lanes:	1.00	2.00	1.00	2.00
Final Sat.:	1750	3800	1750	3800
Capacity Analysis Module:				
Vol/Sat:	0.07	0.19	0.13	0.07
Crit Moves:	****	****	****	****
Green Time:	11.4	45.0	45.0	7.0
Volume/Cap:	0.56	0.36	0.25	0.81
Delay/Veh:	28.4	8.9	8.3	48.1
ProgAdjFcrt:	1.00	1.00	1.00	1.00
AddDel/Veh:	28.4	7.5	7.0	48.1
Desgnqueue:	5	17	5	5

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM Peak

Level Of Service Computation Report
 5 HCM Operations (Future Volume Alternative)
 AM 2013 Project Alt. 1

Lanes:	0	0	1	1	0
Initial Vol.:	0	0	709***	1	394
Signal=Protect/Rights-Overlap					
Approach:	North Bound	South Bound	East Bound	West Bound	
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	
Min. Green:	0 10 10	7 10 0	0 0 0	0 0 0	7 0
Volume Module:					
Base Vol.:	0 709	394	227 673	0 0	0 204 0
Greening Adj.:	1.00 1.00	1.00	1.00 1.00	1.00 1.00	1.00 1.00
Initial Bse.:	0 709	394	227 673	0 0	204 0
Added Vol.:	0 0	0	0 0	0 0	0 0
PassengerVol.:	0 0	0	0 0	0 0	0 0
Initial Put.:	0 709	394	227 673	0 0	204 0
User Adj.:	1.00 1.00	1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Adj.:	1.00 1.00	1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Volume:	0 709	394	227 673	0 0	204 0
Reducut Vol.:	0 0	0	0 0	0 0	0 0
Reduced Vol.:	0 709	394	227 673	0 0	204 0
PCE Adj.:	1.00 1.00	1.00	1.00 1.00	1.00 1.00	1.00 1.00
MLF Adj.:	1.00 1.00	1.00	1.00 1.00	1.00 1.00	1.00 1.00
Final Vol.::	0 709	394	227 673	0 0	204 0
Saturation Flow Module:					
Sat./Lane:	1800 1800	1800	1800 1800	1800	1800
Adjustment:	0.97 1.04	1.00	0.97 1.06	0.97 1.06	0.97 1.06
Lanes:	0.00 1.27	0.73	1.00 2.00	0.00 0.00	2.00 0.00
Final Sat.:	0 2377	1321	1750 3800	0 0	3150 0
Capacity Analysis Module:					
Vol./Sat.:	0.00 0.30	0.30	0.13 0.18	0.00 0.00	0.00 0.00
Crit Moves:	*****	*****	*****	*****	*****
Green Time:	0.0 0.49	0.59	0.7 21.3	7.04	0.0 0.0
Volume/Cap:	0.00 0.55	0.45	0.55 0.23	0.00 0.00	0.00 0.00
Delay/Yeh:	0.00 10.3	5.6	24.1 2.0	0.0 0.0	0.0 0.0
Delay Adj.:	1.00 1.00	1.00	1.00 1.00	1.00 1.00	1.00 1.00
ProjAdj/Fctr:	1.00 1.00	1.00	1.00 1.00	1.00 1.00	1.00 1.00
Adj Del/Veh:	0.0 1.37	5.6	24.1 2.0	0.0 0.0	0.0 0.0
Desired/One:	0.0 17	7	q 8	0 0	q 0

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Level Of Service Computation Report
 5 HCM Operations (Future Volume Alternative)
 AM 2013 Project Alt. 1

Lanes:	0	0	1	1	0
Initial Vol.:	0	0	709***	1	394
Signal=Protect/Rights-Overlap					
Approach:	North Bound	South Bound	East Bound	West Bound	
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	
Min. Green:	0 10 10	7 10 0	0 0 0	0 0 0	7 0
Volume Module:					
Base Vol.:	0 709	394	227 673	0 0	0 204 0
Greening Adj.:	1.00 1.00	1.00	1.00 1.00	1.00 1.00	1.00 1.00
Initial Bse.:	0 709	394	227 673	0 0	204 0
Added Vol.:	0 0	0	0 0	0 0	0 0
PassengerVol.:	0 0	0	0 0	0 0	0 0
Initial Put.:	0 709	394	227 673	0 0	204 0
User Adj.:	1.00 1.00	1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Adj.:	1.00 1.00	1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Volume:	0 709	394	227 673	0 0	204 0
Reducut Vol.:	0 0	0	0 0	0 0	0 0
Reduced Vol.:	0 709	394	227 673	0 0	204 0
PCE Adj.:	1.00 1.00	1.00	1.00 1.00	1.00 1.00	1.00 1.00
MLF Adj.:	1.00 1.00	1.00	1.00 1.00	1.00 1.00	1.00 1.00
Final Vol.::	0 709	394	227 673	0 0	204 0
Saturation Flow Module:					
Sat./Lane:	1800 1800	1800	1800 1800	1800	1800
Adjustment:	0.97 1.04	1.00	0.97 1.06	0.97 1.06	0.97 1.06
Lanes:	0.00 1.27	0.73	1.00 2.00	0.00 0.00	2.00 0.00
Final Sat.:	0 2377	1321	1750 3800	0 0	3150 0
Capacity Analysis Module:					
Vol./Sat.:	0.00 0.30	0.30	0.13 0.18	0.00 0.00	0.00 0.00
Crit Moves:	*****	*****	*****	*****	*****
Green Time:	0.0 0.49	0.59	0.7 21.3	7.0 4	0.0 0.0
Volume/Cap:	0.00 0.55	0.45	0.55 0.23	0.00 0.00	0.00 0.00
Delay/Yeh:	0.00 10.3	5.6	24.1 2.0	0.0 0.0	0.0 0.0
Delay Adj.:	1.00 1.00	1.00	1.00 1.00	1.00 1.00	1.00 1.00
ProjAdj/Fctr:	1.00 1.00	1.00	1.00 1.00	1.00 1.00	1.00 1.00
Adj Del/Veh:	0.0 13	5.6	24.1 2.0	0.0 0.0	0.0 0.0
Desired/One:	0.0 17	7	q 8	0 0	q 0

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1

Level Of Service Computation Report
 5 HCM Operations (Future Volume Alternative)
 AM 2013 Project Alt. 1

Lanes:	0	0	1	1	0
Initial Vol.:	0	0	709***	1	394
Signal=Protect/Rights-Overlap					
Approach:	North Bound	South Bound	East Bound	West Bound	
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	
Min. Green:	0 10 10	7 10 0	0 0 0	0 0 0	7 0
Volume Module:					
Base Vol.:	0 709	394	227 673	0 0	0 204 0
Greening Adj.:	1.00 1.00	1.00	1.00 1.00	1.00 1.00	1.00 1.00
Initial Bse.:	0 709	394	227 673	0 0	204 0
Added Vol.:	0 0	0	0 0	0 0	0 0
PassengerVol.:	0 0	0	0 0	0 0	0 0
Initial Put.:	0 709	394	227 673	0 0	204 0
User Adj.:	1.00 1.00	1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Adj.:	1.00 1.00	1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Volume:	0 709	394	227 673	0 0	204 0
Reducut Vol.:	0 0	0	0 0	0 0	0 0
Reduced Vol.:	0 709	394	227 673	0 0	204 0
PCE Adj.:	1.00 1.00	1.00	1.00 1.00	1.00 1.00	1.00 1.00
MLF Adj.:	1.00 1.00	1.00	1.00 1.00	1.00 1.00	1.00 1.00
Final Vol.::	0 709	394	227 673	0 0	204 0
Saturation Flow Module:					
Sat./Lane:	1800 1800	1800	1800 1800	1800	1800
Adjustment:	0.97 1.04	1.00	0.97 1.06	0.97 1.06	0.97 1.06
Lanes:	0.00 1.27	0.73	1.00 2.00	0.00 0.00	2.00 0.00
Final Sat.:	0 2377	1321	1750 3800	0 0	3150 0
Capacity Analysis Module:					
Vol./Sat.:	0.00 0.30	0.30	0.13 0.18	0.00 0.00	0.00 0.00
Crit Moves:	*****	*****	*****	*****	*****
Green Time:	0.0 0.49	0.59	0.7 21.3	7.04	0.0 0.0
Volume/Cap:	0.00 0.55	0.45	0.55 0.23	0.00 0.00	0.00 0.00
Delay/Yeh:	0.00 10.3	5.6	24.1 2.0	0.0 0.0	0.0 0.0
Delay Adj.:	1.00 1.00	1.00	1.00 1.00	1.00 1.00	1.00 1.00
ProjAdj/Fctr:	1.00 1.00	1.00	1.00 1.00	1.00 1.00	1.00 1.00
Adj Del/Veh:	0.0 1.37	5.6	24.1 2.0	0.0 0.0	0.0 0.0
Desired/One:	0.0 17	7	q 8	0 0	q 0

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1985 HCM Operations (Future Volume Alternative)
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 35 HCM Operations (Future Volume Alternative)
 AM 2013 Project Alt. 2

Takemoto et al. / Binge Drinking 101

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Top Row (3-lane signal):

Initial Vol:	769***	Signal=Permit/Rights=Include
Lanes:	1 0 0	1 0 0
Phase 1	Red (solid)	Green (solid)
Phase 2	Yellow (solid)	Green (solid)
Phase 3	Green (solid)	Yellow (solid)

Bottom Row (2-lane signal):

Initial Vol:	533	Signal=Protect
Lanes:	0*** 0	Rights=Overla
Phase 1	Red (solid)	Green (solid)
Phase 2	Yellow (solid)	Green (solid)

Lanes: Initial Vol: Signal=Permit/Rights=Ignore

Approach:	North Bound	South Bound	East Bound	West Bound
Movement :	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	0 0 0	10 10 10	0 10 10	7 10 0
Volume Module:	- - - - -	- - - - -	- - - - -	- - - - -
Base Vol:	0 0 0	171 1 1	366 0 255	133 42 320
Growth Initial Bse:	1.18 1.18 1.18	1.18 1.18 1.18	1.18 1.18 1.18	1.18 1.18 1.18
Initial Bse:	0 0 0	202 1 1	433 0 302	157 50 379

Figure 1 displays four sets of traffic signal timing diagrams, each corresponding to a specific initial volume (Vol) and cycle time (Cycle Time). The top row shows the scenario **Signal=Protect**, while the bottom row shows **Signal=Permit/Rights=Include**. The left column provides initial conditions, and the right column provides results.

Initial Vol:	Vol Cnt Date:	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):
769***	n/a	100	9	0.868	25.4	23.5
649						
197						

Initial Lanes: Rights=Overall

Initial Vol: 769* Lanes: 1 0 0 1 0 1 0**

Initial Vol: 649 Lanes: 0 0 0 0 0 0 0

Initial Vol: 197 Lanes: 1 0 0 0 0 0 0

Signal=Protect

Initial Lanes: Rights=Overall

Initial Vol: 769* Lanes: 1 0 0 1 0 1 0**

Initial Vol: 649 Lanes: 0 0 0 0 0 0 0

Initial Vol: 197 Lanes: 1 0 0 0 0 0 0

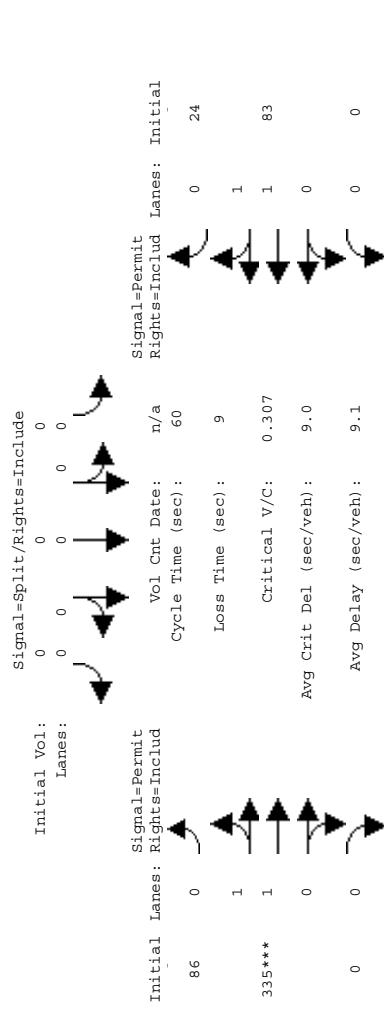
Signal=Protect

Lanes: Initial Vol: 0 0 0 0 0 0
Signal=Permit/Rights=Ignore

Approach:	North Bound		South Bound		East Bound		West Bound	
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	0	0	0	10	10	10	0	10
Volume Module:								
Base Vol.:	0	0	0	171	1	366	0	255
Growth Adj.:	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18
Initial Base:	0	0	0	202	1	433	0	302
							157	50
							37.9	1.0

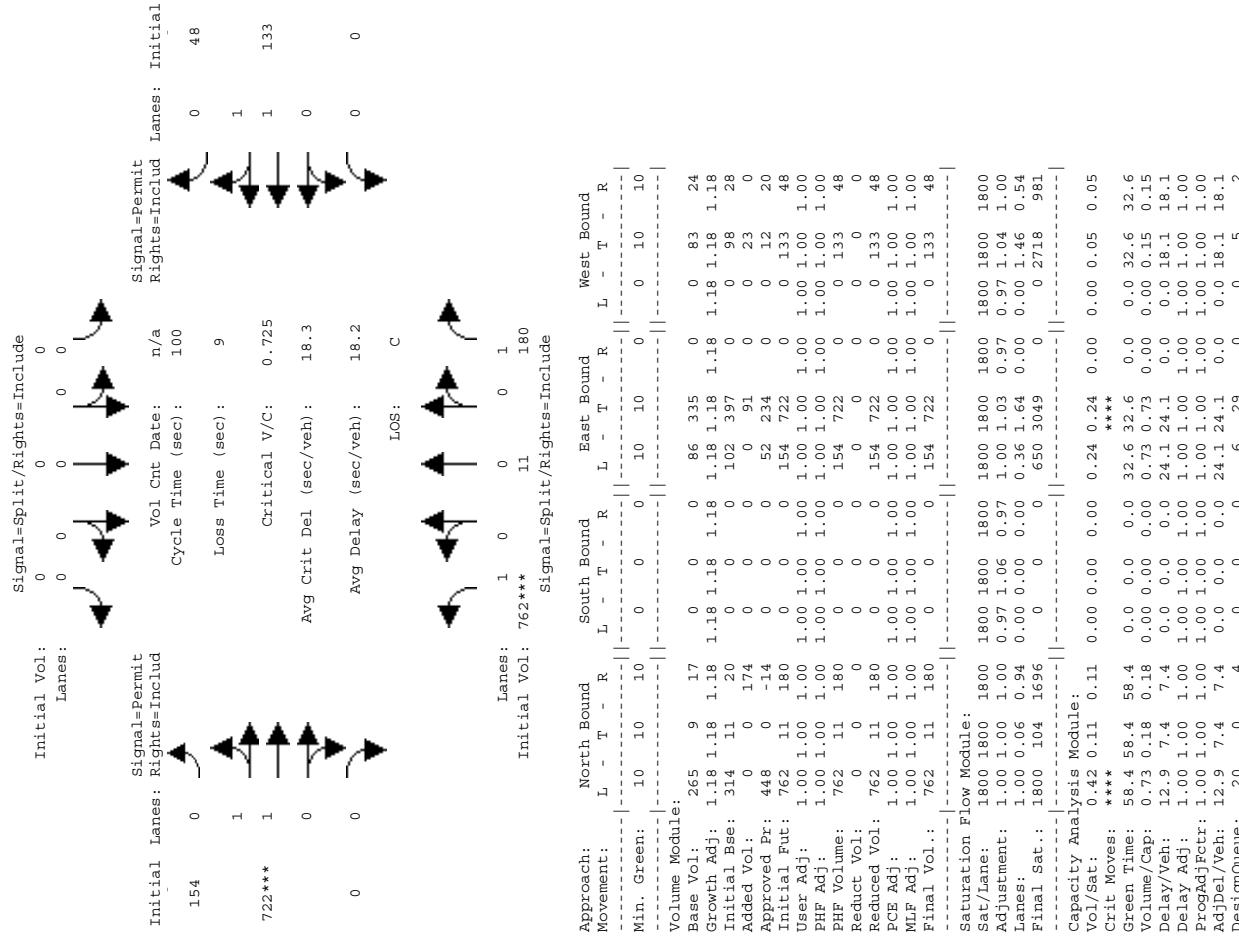
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM Peak

Intersection #11: Ellis/101 NB Ramps
Intersection #11: Ellis/101 NB Ramps
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1



Initial Vol: 265*** Lanes: 1
Signal=Split/Rights=Include
Vol Cnt Date: 9 Cycle Time (sec): 17
Loss Time (sec): 1
Critical V/C: 0.307
Avg Crit Del (sec/veh): 9.0
Avg Delay (sec/veh): 9.1
LOS: B

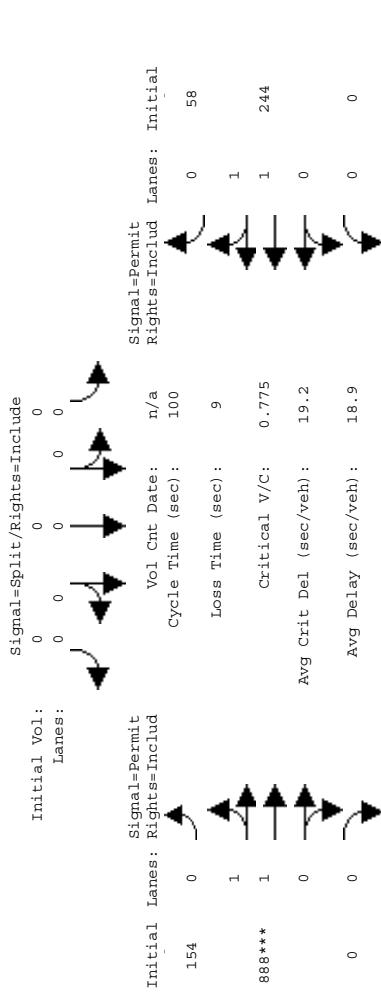
Approach:	North Bound	South Bound	East Bound	West Bound	Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	10 10	10 10	0 10	0 10	Min. Green:	10 10	10 10	0 10	0 10
Volume Module:					Volume Module:				
Base Vol:	265 9	17 0	0 0	0 0	Base Vol:	265 9	17 0	0 0	0 0
Growth Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	Growth Adj:	1.18 1.18	1.18 1.18	1.18 1.18	1.18 1.18
Initial Bee:	265 9	17 0	0 0	0 0	Initial Bee:	314 11	20 0	0 0	0 0
Added Vol:	0 0	0 0	0 0	0 0	Added Vol:	0 0	174 0	0 0	91 0
Pastrial Fct:	265 9	17 0	0 0	0 0	Pastrial Fct:	448 0	14 0	0 0	234 0
User Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	User Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	PHF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Volume:	265 9	17 0	0 0	0 0	PHF Volume:	762 11	180 0	0 0	154 722 0
Reduc Vol:	0 0	0 0	0 0	0 0	Reduc Vol:	0 0	0 0	0 0	0 0
Reduc Vol:	265 9	17 0	0 0	0 0	Reduc Vol:	762 11	180 0	0 0	154 722 0
PCE Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	PCE Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
MLF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	MLF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
Final Vol.:	265 9	17 0	0 0	0 0	Final Vol.:	762 11	180 0	0 0	154 722 0
Saturation Flow Module:					Saturation Flow Module:				
Vol/Lane:	1800 1800	1800 1800	1800 1800	1800 1800	Vol/Lane:	1800 1800	1800 1800	1800 1800	1800 1800
Adjustment:	1.00 1.00	1.00 0.97	1.00 0.97	1.00 0.97	Adjustment:	1.00 1.00	1.00 0.97	1.00 1.00	1.00 0.97
Lanes:	1.00 0.35	0.65 0.00	0.00 0.42	0.00 1.58	Lanes:	1.00 0.06	0.94 0.00	0.00 0.00	0.00 1.46
Final Sat.:	1800 623	1177 0	0 0	0 756	Final Sat.:	1800 104	1696 0	0 0	0 650
Capacity Analysis Module:					Capacity Analysis Module:				
Vol/Sat:	0.15 0.01	0.01 0.00	0.00 0.11	0.00 0.11	Vol/Sat:	0.42 0.11	0.11 0.00	0.00 0.00	0.24 0.24
Crit Moves:	*****				Crit Moves:	*****			
Green Time:	28.8	28.8	0.0	0.0	Green Time:	58.4	58.4	0.0	0.0
Volume/Cap:	0.31 0.03	0.00 0.00	0.00 0.31	0.00 0.31	Volume/Cap:	0.73 0.18	0.18 0.00	0.00 0.00	0.73 0.73
Delay/Veh:	7.3	6.3	0.0	0.0	Delay/Veh:	12.9	7.4	0.0	0.0
Delay Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	Delay Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
ProgAdjFctr:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	ProgAdjFctr:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
AddDel/Veh:	7.3	6.3	0.0	0.0	AddDel/Veh:	12.9	7.4	0.0	0.0
Desgnqueue:	5	0	0	0	Desgnqueue:	20	0	0	6



Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 2

Level Of Service Computation Report
1997 HCM 4-Way Stop (Future Volume Alternative)
AM Peak

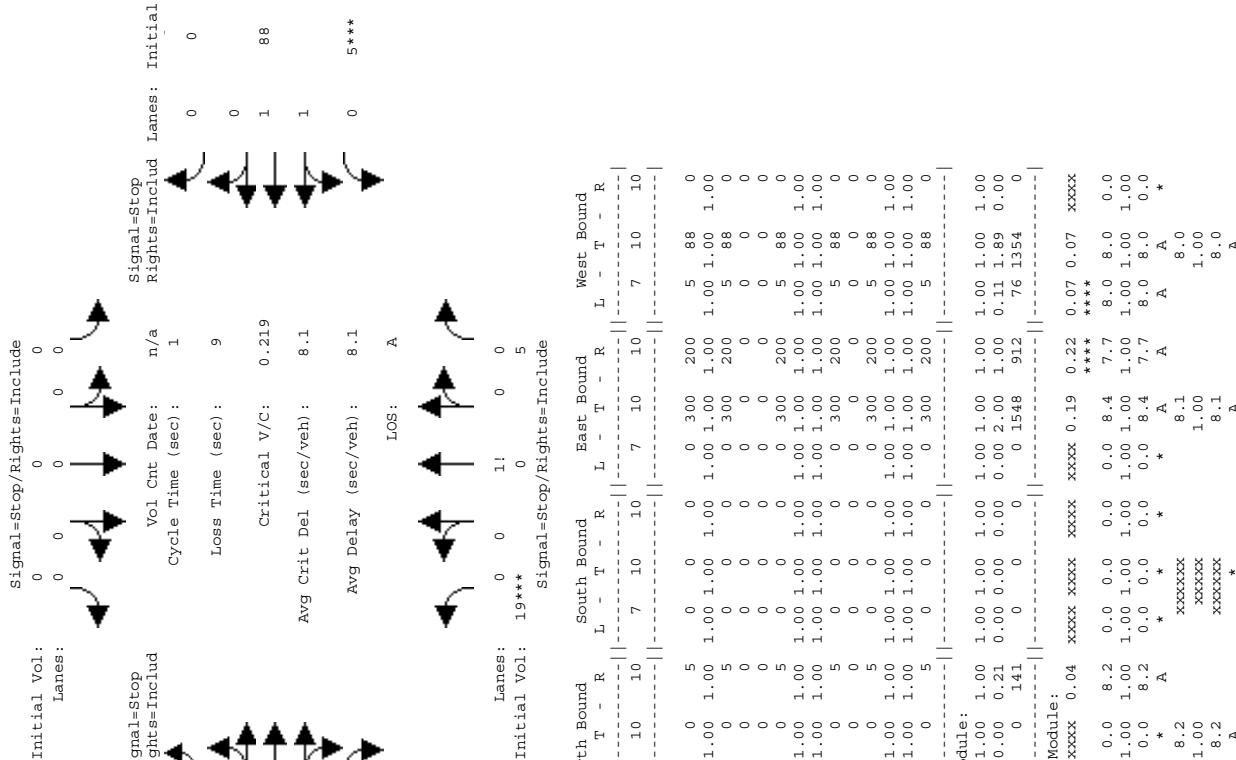
Intersection #11: Ellis/101 NB Ramps



Signal=Split/Rights=Include

	North Bound	South Bound	East Bound	West Bound
Approach:	L - T - R	L - T - R	L - T - R	L - T - R
Movement:	-	-	-	-
Min. Green:	10 10 0 0	0 10 10 0	0 10 10 0	0 10 10 0
Volume Module:	265 9 17 0	0 0 0 0	86 335 0 0	83 24 0 0
Base Vol:	1.18 1.18 1.18 1.18	1.18 1.18 1.18 1.18	1.18 1.18 1.18 1.18	1.18 1.18 1.18 1.18
Growth Adj:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
Initial Bee:	314 11 0 0	0 0 0 0	397 0 0 0	98 28 0 0
Added Vol:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
Approved Pr:	448 0 0 0	0 0 0 0	52 234 0 0	10 12 20 0
Initial Fut:	652 11 379 0	0 0 0 0	154 988 0 0	244 58 0 0
User Adj:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
PHF Adj:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
PHF Volume:	762 11 379 0	0 0 0 0	154 888 0 0	244 58 0 0
Reducit Vol:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
Reduced Vol:	762 11 379 0	0 0 0 0	154 888 0 0	244 58 0 0
PCE Adj:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
MLF Adj:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
Final Vol.:	762 11 379 0	0 0 0 0	154 888 0 0	244 58 0 0
Saturation Flow Module:	1800 1800 1800 1800	1800 1800 1800 1800	1800 1800 1800 1800	1800 1800 1800 1800
Adj/Sat:	1.00 1.00 1.00 1.00	0.97 1.06 0.97 1.03	0.97 1.03 0.97 1.03	1.00 1.00 1.00 1.00
Lanes:	1.00 0.03 0.97 0.00	0.00 0.00 0.00 0.00	0.30 1.70 0.00 0.00	1.00 1.61 0.39 0.00
Final Sat.:	1800 51 1749 0	0 0 0 0	547 3153 0 0	2989 710 0 0
Capacity Analysis Module:	0.42 0.22 0.22 0.00	0.00 0.00 0.00 0.00	0.28 0.28 0.00 0.00	0.08 0.08 0.00 0.00
Vol/Sat:	*****	*****	*****	*****
Crit Moves:	54.6 54.6 54.6 0.0	0.0 0.0 0.0 0.0	36.4 36.4 0.0 0.0	36.4 36.4 0.0 0.0
Green Time:	0.77 0.40 0.40 0.0	0.00 0.00 0.00 0.00	0.77 0.77 0.00 0.00	0.77 0.77 0.00 0.00
Volume/Cap:	15.4 10.0 10.0 0.0	0.0 0.0 0.0 0.0	23.5 23.5 0.0 0.0	16.8 16.8 0.0 0.0
Delay/Veh:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
ProgAdjFctr:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
Addl/Veh:	15.4 10.0 10.0 0.0	0.0 0.0 0.0 0.0	23.5 23.5 0.0 0.0	16.8 16.8 0.0 0.0
DesgnQueue:	21 0 10 0	0 0 0 0	6 34 0 0	9 2 0 0

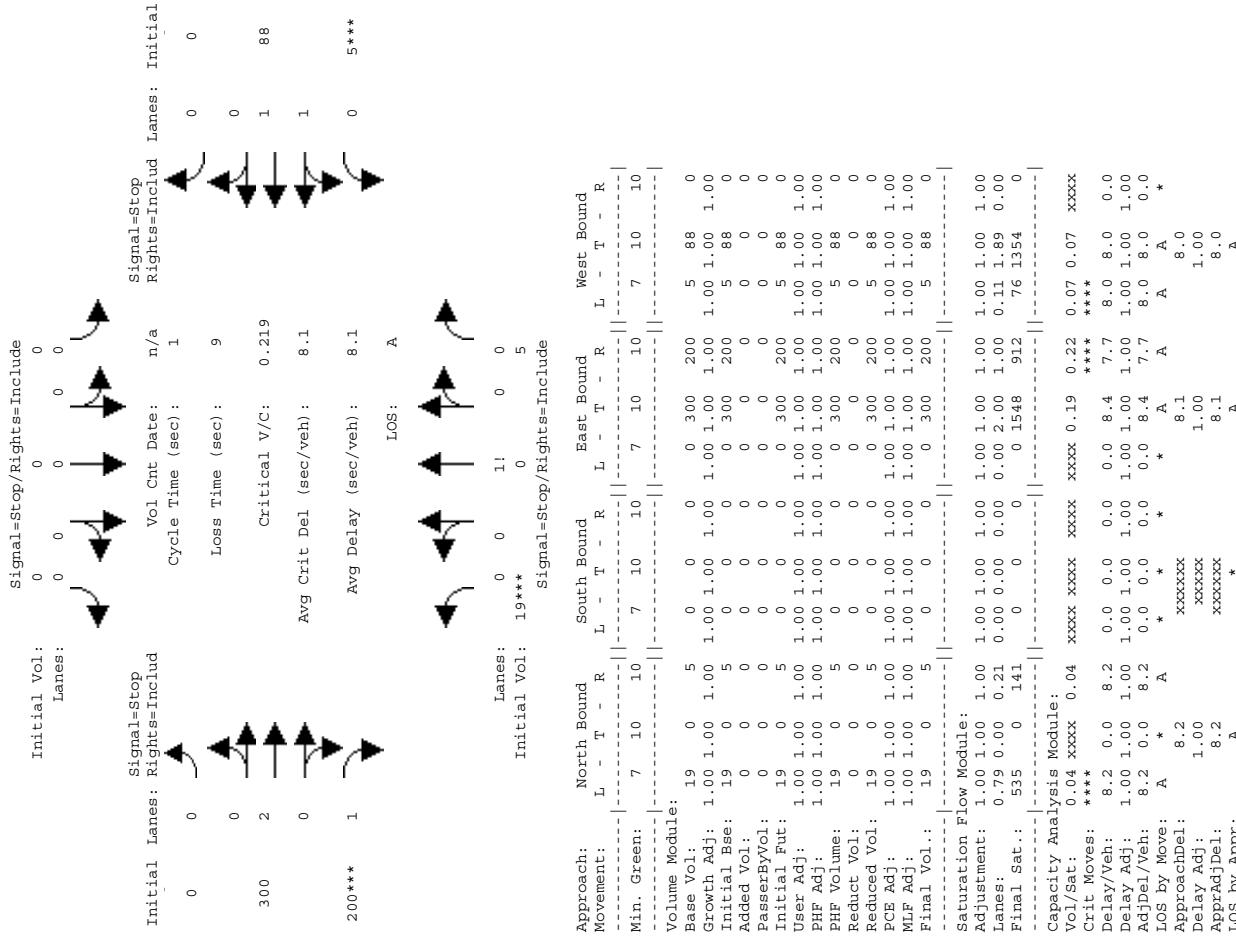
Intersection #12: Ellis/Manila



Level Of Service Computation Report
1997 HCM 4-Way Stop (Future Volume Alternative)

Intersection #12: Ellis/Manila

AM Peak



**Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM Peak**

Level Of Service Computation Report
985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1

[signature] = Protect / Right to include

Lanes: 2 0 2 0 0
Initial Vol: 98 803*** 0
Signal=Protect/Rights=Include

Approach:	North Bound	South Bound	East Bound
movement:	L - T - R	L - T - R	L - T - R
Initial Green:	7 10 0	0 10 10	0 0 0
Volume Module:	- - -	- - -	- - -
Base Vol.:	98 803 0	0 605 69	0 0 0
Highway Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Base:	98 803 0	0 605 69	0 0 0
Added Vol.:	0 0 0	0 0 0	0 0 0
PassengerVol.:	0 0 0	0 0 0	0 0 0
Priority Fut.:	98 803 0	0 605 69	0 0 0
User Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HFE Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HVF Volume:	98 803 0	0 605 69	0 0 0
Reduced Vol.:	0 0 0	0 0 0	0 0 0
Reduced Vol.:	98 803 0	0 605 69	0 0 0
CCE Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HLF Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Vol.:	98 803 0	0 605 69	0 0 0
Final Vol.:	- - -	- - -	- - -
Saturation Flow Module:	- - -	- - -	- - -
at Lane:	1800 1800 1800	1800 1800 1800	1800 1800 1800
Adjustment:	0.88 1.06 0.97	0.97 1.06 0.97	0.97 1.06 0.97
Vol.:	2.00 2.00 0.00	0.00 3.00 1.00	0.00 0.00 0.00
Initial Sat.:	2100 3800 0	0 5700 1750	0 0 0
Capacity Analysis Module:	- - -	- - -	- - -
Initial Mov.:	0.03 0.21 0.00	0.00 0.11 0.04	0.00 0.00 0.00
Initial Time:	15.7	38.1	0.0
Volume/Cap:	0.17 0.47	0.0	0.0
Delay/Veh:	22.2	12.6	0.0
Priority Adj.:	1.00	1.00	1.00
ProgAdj/Rct:	1.00	1.00	1.00
DelAdj/Veh:	22.2	12.6	0.0
Final Mov.:	4.22	0	22
Final Time:	0	0	2
Volume/Cap:	0.17	0.47	0.0
Delay/Veh:	22.2	12.6	0.0
Priority Adj.:	1.00	1.00	1.00
ProgAdj/Rct:	1.00	1.00	1.00
DelAdj/Veh:	22.2	12.6	0.0
Final Mov.:	4.22	0	0
Final Time:	0	0	0
Volume/Cap:	0.17	0.47	0.0
Delay/Veh:	22.2	12.6	0.0
Priority Adj.:	1.00	1.00	1.00
ProgAdj/Rct:	1.00	1.00	1.00
DelAdj/Veh:	22.2	12.6	0.0

Level Of Service Computation Report
985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1

[signature] = Protect / Right to include

Lanes: 2 0 2 0 0
Initial Vol: 98 803*** 0
Signal=Protect/Rights=Include

Approach:	North Bound	South Bound	East Bound
movement:	L - T - R	L - T - R	L - T - R
Initial Green:	7 10 0	0 10 10	0 0 0
Volume Module:	- - -	- - -	- - -
Base Vol.:	98 803 0	0 605 69	0 0 0
Highway Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Base:	98 803 0	0 605 69	0 0 0
Added Vol.:	0 0 0	0 0 0	0 0 0
PassengerVol.:	0 0 0	0 0 0	0 0 0
Priority Fut.:	98 803 0	0 605 69	0 0 0
User Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HFE Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HFP Volume:	98 803 0	0 605 69	0 0 0
Reduced Vol.:	0 0 0	0 0 0	0 0 0
Reduced Vol.:	98 803 0	0 605 69	0 0 0
CCE Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HLF Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Vol.:	98 803 0	0 605 69	0 0 0
Final Vol.:	- - -	- - -	- - -
Saturation Flow Module:	- - -	- - -	- - -
at Lane:	1800 1800 1800	1800 1800 1800	1800 1800 1800
Adjustment:	0.88 1.06 0.97	0.97 1.06 0.97	0.97 1.06 0.97
Vol.:	2.00 2.00 0.00	0.00 3.00 1.00	0.00 0.00 0.00
Initial Sat.:	2100 3800 0	0 5700 1750	0 0 0
Capacity Analysis Module:	- - -	- - -	- - -
Vol./Sat.:	0.03 0.21 0.00	0.00 0.11 0.04	0.00 0.00 0.00
Exit Moves:	*****	*****	*****
Travel Time:	15.7	38.1	0.0
Volume/Cap:	0.17	0.47	0.0
Relay/Veh:	22.2	12.6	0.0
Priority Adj.:	1.00	1.00	1.00
ProgAdj/Rct:	1.00	1.00	1.00
DelivPd/Veh:	22.2	12.6	0.0
TransitModule:	4	22	0
TransitModule:	0	22	2

Level Of Service Computation Report
985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1

[signature] = Protect / Right to include

Lanes: 2 0 2 0 0
Initial Vol: 98 803*** 0
Signal=Protect/Rights=Include

Approach:	North Bound	South Bound	East Bound
movement:	L - T - R	L - T - R	L - T - R
Initial Green:	7 10 0	0 10 10	0 0 0
Volume Module:	- - -	- - -	- - -
Base Vol.:	98 803 0	0 605 69	0 0 0
Highway Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Base:	98 803 0	0 605 69	0 0 0
Added Vol.:	0 0 0	0 0 0	0 0 0
PassengerVol.:	0 0 0	0 0 0	0 0 0
Priority Fut.:	98 803 0	0 605 69	0 0 0
User Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HFE Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HFP Volume:	98 803 0	0 605 69	0 0 0
Reduced Vol.:	0 0 0	0 0 0	0 0 0
Reduced Vol.:	98 803 0	0 605 69	0 0 0
CCE Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HLF Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Vol.:	98 803 0	0 605 69	0 0 0
Final Vol.:	- - -	- - -	- - -
Saturation Flow Module:	- - -	- - -	- - -
at Lane:	1800 1800 1800	1800 1800 1800	1800 1800 1800
Adjustment:	0.88 1.06 0.97	0.97 1.06 0.97	0.97 1.06 0.97
Vol.:	2.00 2.00 0.00	0.00 3.00 1.00	0.00 0.00 0.00
Initial Sat.:	3150 3800 0	0 5700 15700	0 0 0
Capacity Analysis Module:	- - -	- - -	- - -
Initial Mov.:	0.03 0.21 0.00	0.00 0.11 0.04	0.00 0.00 0.00
Initial Time:	15.7 38.1 0.0	0.0 22.4 22.4	0.0 0.0 0.0
Volume/Cap:	0.17 0.47 0.0	0.00 0.40 0.15	0.00 0.00 0.00
Delay/Veh:	22.2 12.6 0.0	0.0 19.7 18.2	0.0 0.0 0.0
Priority Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
ProgAdj/Rct:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
DelivPd/Veh:	22.2 12.6 0.0	0.0 19.7 18.2	0.0 0.0 0.0
Final Mov.:	4.22 0.0 0	0 22 2	0 0 0
Final Time:	15.7 38.1 0.0	0.0 22.4 22.4	0.0 0.0 0.0
Final Volume/Cap:	0.17 0.47 0.0	0.00 0.40 0.15	0.00 0.00 0.00
Final Delay/Veh:	22.2 12.6 0.0	0.0 19.7 18.2	0.0 0.0 0.0
Final Priority Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final ProgAdj/Rct:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final DelivPd/Veh:	22.2 12.6 0.0	0.0 19.7 18.2	0.0 0.0 0.0

Level Of Service Computation Report
985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1

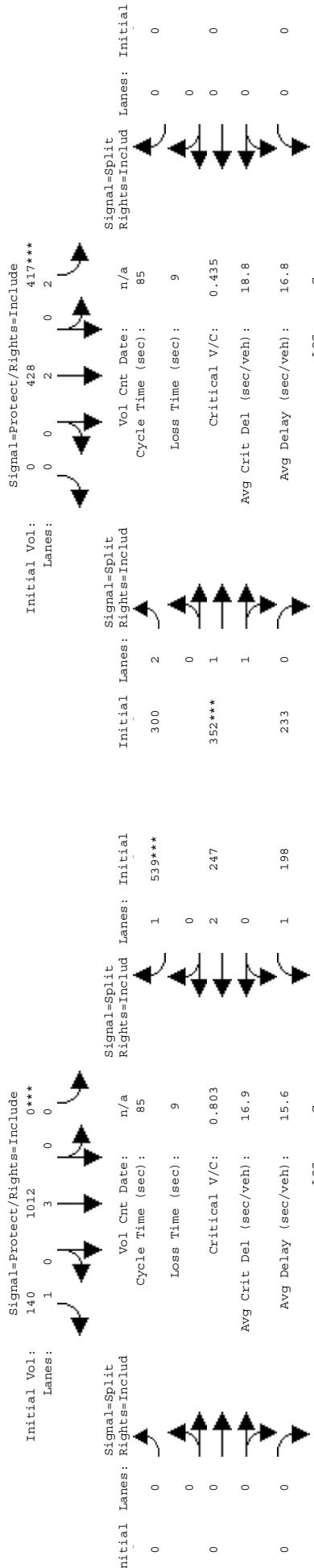
[signature] = Protect / Right to include

Lanes: 2 0 2 0 0
Initial Vol: 98 803*** 0
Signal=Protect/Rights=Include

Approach:	North Bound	South Bound	East Bound
movement:	L - T - R	L - T - R	L - T - R
Initial Green:	7 10 0	0 10 10	0 0 0
Volume Module:	- - -	- - -	- - -
Base Vol.:	98 803 0	0 605 69	0 0 0
Highway Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Base:	98 803 0	0 605 69	0 0 0
Added Vol.:	0 0 0	0 0 0	0 0 0
PassengerVol.:	0 0 0	0 0 0	0 0 0
Priority Fut.:	98 803 0	0 605 69	0 0 0
User Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HFE Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HVF Volume:	98 803 0	0 605 69	0 0 0
Reduced Vol.:	0 0 0	0 0 0	0 0 0
Reduced Vol.:	98 803 0	0 605 69	0 0 0
CCE Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HLF Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Vol.:	98 803 0	0 605 69	0 0 0
Final Vol.:	- - -	- - -	- - -
Saturation Flow Module:	- - -	- - -	- - -
at Lane:	1800 1800 1800	1800 1800 1800	1800 1800 1800
Adjustment:	0.88 1.06 0.97	0.97 1.06 0.97	0.97 1.06 0.97
Vol.:	2.00 2.00 0.00	0.00 3.00 1.00	0.00 0.00 0.00
Initial Sat.:	3150 3800 0	0 5700 1750	0 0 0
Capacity Analysis Module:	- - -	- - -	- - -
Vol/Sat:	0.03 0.21 0.00	0.00 0.11 0.04	0.00 0.00 0.00
Unit Moves:	****	****	****
Travel Time:	15.7	38.1	0.0
Volume/Cap:	0.17 0.47	0.0	0.0
Delay/Veh:	22.2	12.6	0.0
Priority Adj.:	1.00	1.00	1.00
ProgAdj/Rct:	1.00	1.00	1.00
DelAdj/Veh:	22.2	12.6	0.0
Final Veh:	4.22	0	22 2

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 2

**Level Of Service Computation Report
985 HCM Operations (Future Volume Alternative)
AM Peak**



Lanes: 2 0 2 0 0
Initial Vol: 116 1559***
Signal-Protect Brights-Include 0

approach:	North Bound	South Bound	East Bound	West Bound
movement :	L - T - R	L - T - R	L - T - R	L - T - R
n. Green:	7 10 0	0 10 0	0 0 0	0 10 0
Volume Module:	- -	- -	- -	- -
use Vol:	98 803 0	0 605 69	0 0 0	153 110 368
growth Adj:	118 1.18 1.18	1.18 1.18 1.18	1.18 1.18 1.18	1.18 1.18 1.18
initial Bse:	116 951 0	0 716 82	0 0 0	181 130 436
added Vol:	0 252 0	0 46 23	0 0 0	5 0 2
Approved Fut:	116 356 0	0 250 35	0 0 0	12 17 101
Final Vol:	116 1559 0	0 1012 140	0 0 0	198 247 539
ter Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
IPF Volume:	116 1559 0	0 1012 140	0 0 0	198 247 539
Product Vol:	0 0 0	0 0 0	0 0 0	0 0 0
Reduced Vol:	116 1559 0	0 1012 140	0 0 0	198 247 539
FE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
IPF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Vol.:	116 1559 0	0 1012 140	0 0 0	198 247 539
Flutration Flow Module:	- -	- -	- -	- -
lt/Lane:	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800
Judgement:	0.88 1.06 0.97	0.97 1.06 0.97	0.97 1.06 0.97	0.97 1.06 0.97
names:	2.00 2.00 0.00	0.00 3.00 1.00	0.00 0.00 0.00	1.00 2.00 1.00
initial Sat.:	3150 3800 0	0 5700 1750	0 0 0	1750 3800 1750
Capacity Analysis Module:	- -	- -	- -	- -
lt/Sat:	0.04 0.41 0.00	0.00 0.18 0.08	0.00 0.00 0.00	0.11 0.06 0.31
lit Mores:	****	****	****	****
Run Time:	7.0 43.4 0.0	0.0 36.4 36.4	0.0 0.0 0.0	32.6 32.6 32.6
Volume/Cap:	0.45 0.80 0.00	0.00 0.41 0.19	0.00 0.00 0.00	0.30 0.17 0.80
lay/Veh:	29.1 14.9 0.0	0.0 12.9 11.5	0.0 0.0 0.0	13.9 13.1 22.6
lay Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
layAdj/rot:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
lDel/Veh:	29.1 14.9 0.0	0.0 12.9 11.5	0.0 0.0 0.0	13.9 13.1 22.6
lDel/Veh:	29.1 14.9 0.0	0.0 12.9 4	0.0 0.0 0.0	6 7 7

**Level Of Service Computation Report
985 HCM Operations (Future Volume Alternative)
AM Peak**

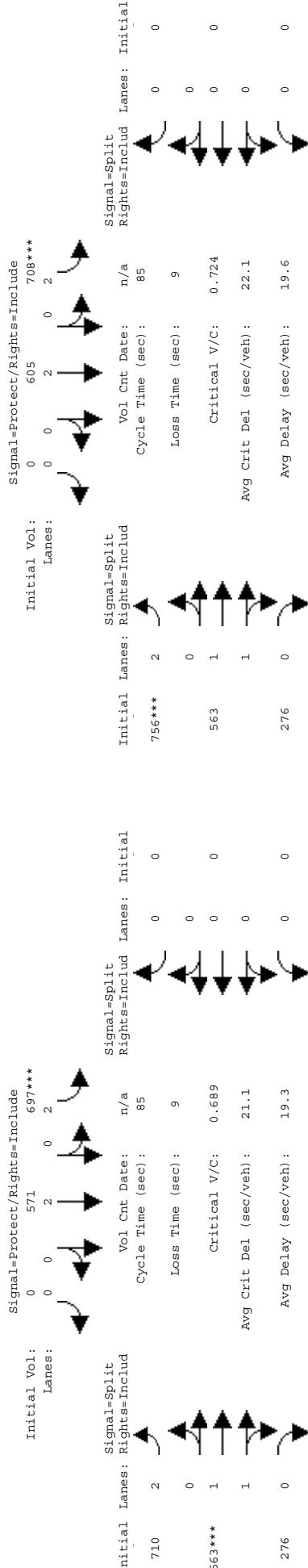
The figure displays a 3x3 grid of traffic signal timing diagrams, each showing the progression of vehicles through a four-lane intersection. The columns represent different signal configurations, and the rows represent different initial conditions.

Row	Column 1	Column 2	Column 3
Initial Lanes: 1 Initial Vol: 539***	Initial Lanes: 300 Initial Vol: 352***	Initial Lanes: 233 Initial Vol: 198	
Signal=Split Rights=Includ Lanes: 0 0 2 0	Signal=Split Rights=Includ Lanes: 0 0 2 0	Signal=Split Rights=Includ Lanes: 0 0 2 0	
Vol Cnt Date: Cycle Time (sec): n/a 85	Critical V/C: Loss Time (sec): 0.435 9	Avg Crit Del (sec/veh): Avg Delay (sec/veh): 18.8 16.8	
Initial Lanes: 0 0 2 0	Initial Lanes: 0 0 2 0	Initial Lanes: 0 0 2 0	
Signal=Protect/Rights=Include Lanes: 0 0 2 0	Signal=Protect/Rights=Include Lanes: 0 0 2 0	Signal=Protect/Rights=Include Lanes: 0 0 2 0	
Initial Lanes: 0 0 2 0	Initial Lanes: 0 0 2 0	Initial Lanes: 0 0 2 0	

Approach:	North Bound			South Bound			East Bound			West Bound		
	L - T	- R	L - T - R	L	- T	R	L	- T	R	L	- T	- R
Movement:	-	-	-	-	-	-	-	-	-	-	-	-
Min. Green:	0	10	10	7	10	0	7	10	10	0	0	0
Volume Module:	-	-	-	-	-	-	-	-	-	-	-	-
Base Vol.:	0	746	176	417	428	0	300	352	233	0	0	0
Growth Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bus.:	0	746	176	417	428	0	300	352	233	0	0	0
Added Vol.:	0	0	0	0	0	0	0	0	0	0	0	0
PasserbyVol.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut.:	0	746	176	417	428	0	300	352	233	0	0	0
User Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	746	176	417	428	0	300	352	233	0	0	0
Reducit Vol.:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol.:	0	746	176	417	428	0	300	352	233	0	0	0
PCE Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	746	176	417	428	0	300	352	233	0	0	0
Saturation Flow Module:	-	-	-	-	-	-	-	-	-	-	-	-
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.88	1.05	1.00	0.97	1.06	0.97
Lanes:	0.00	4.00	0.00	2.00	2.00	0.00	2.00	1.18	0.82	0.00	0.00	0.00
Final Sat.:	0	7600	1750	3150	3800	0	3150	2225	1473	0	0	0
Capacity Analysis Module:	-	-	-	-	-	-	-	-	-	-	-	-
Vol/Sat:	0.00	0.10	0.10	0.13	0.11	0.00	0.10	0.16	0.16	0.00	0.00	0.00
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	0.0	19.2	19.2	5.9	45.1	0.0	30.9	30.9	30.9	0.0	0.0	0.0
Volume/Cap:	0.00	0.43	0.45	0.43	0.21	0.00	0.26	0.43	0.43	0.00	0.00	0.00
Delay/Veh.:	0.0	21.6	22.1	18.2	8.0	0.0	14.5	15.7	15.7	0.0	0.0	0.0
Delay Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdj/Fctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjLvl/Veh.:	0.0	21.6	22.1	18.2	8.0	0.0	14.5	15.7	15.7	0.0	0.0	0.0
DesimtMonei.:	0	28	7	14	10	0	q	11	7	0	0	0

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1

Level Of Service Computation Report
985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 2



Lanes: Initial vol:

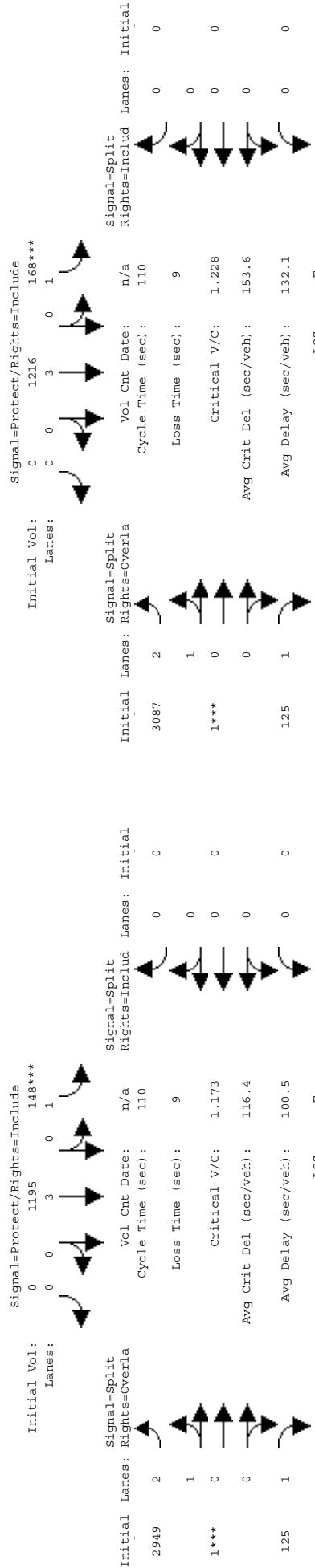
0	0
0	1104

S-mirror-processor (Right side-Trinicide)

Approach:	North Bound	South Bound	East Bound	West Bound
movement:	L - T - R	L - T - R	L - T - R	L - T - R
in. Green:	0 10 10	7 10 0	7 10 0	0 0 0
Column Module:				
base Vol:	0 746 176	417 428	300 352	233 0
growth Adj:	1.18 1.18	1.18 1.18	1.18 1.18	1.18 1.18
initial Bse:	0 883 208	494 507	0 355	417 276
decel Vol:	0 64 0	0 6	0 55	0 0
approved Pr:	0 157 86	203 58	300 146	0 0
initial Put:	0 1104 294	697 571	0 710	563 276
perf Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
IF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HF Volume:	0 1104 294	697 571	0 710	563 276
reduced Vol:	0 0 0	0 0 0	0 0 0	0 0 0
reduced Vol:	0 1104 294	697 571	0 710	563 276
TE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
TF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
final Vol.:	0 1104 294	697 571	0 710	563 276
Saturation Flow Module:				
act/Lane:	1800 1800 1800	1800 1800	1800 1800	1800 1800
adjustment:	0.97 1.06	0.97 0.88	1.06 0.97	0.88 1.04
lanes:	0.00 4.00	1.00 2.00	0.00 1.00	1.00 1.32
initial Sat.:	0 7600 1750	3150 3800	0 3150	2482 1217
Applicability Analysis Module:				
Vol/Sat:	0.00 0.15 0.17	0.22 0.15	0.00 0.23	0.23 0.00
crit Moves:		****	****	****
crit Time:	0.0 20.7	27.3 45.0	0.0 28.0	28.0 0.0
Volume/Cap:	0.00 0.60	0.69 0.27	0.00 0.68	0.69 0.00
slay/Veh:	0.00 22.0	25.4 7.2	0.00 20.1	20.0 0.0
slay/Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
rogAdj/Fctr:	1.00 1.00 1.00	20.5 7.2	1.00 1.00 1.00	1.00 1.00 1.00
slay/Del/Veh:	0.00 22.0	25.4 7.2	0.00 20.1	20.0 0.0
simonone.	0.41 11	23.12	0.24 19	q 0.0

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 2

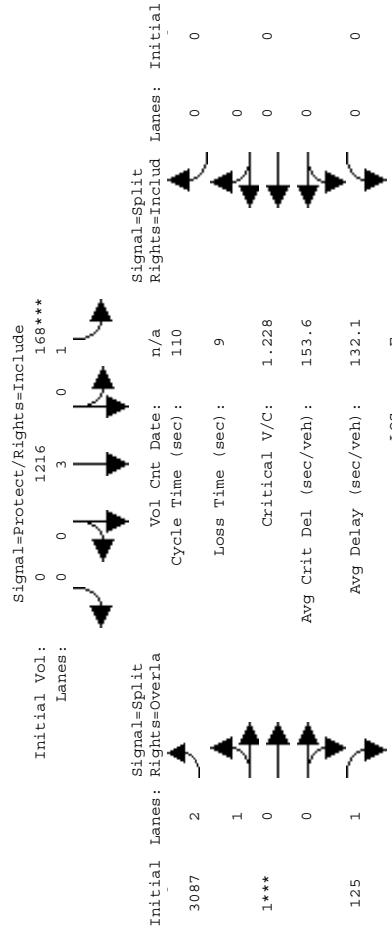


Lanes: Initial Vol: 0 0 5 0 1 3.9
0 3.771***

approach:	North Bound	South Bound	East Bound
L - T - R	L - T - R	L - T - R	
movement:	- - -	- - -	- - -
min. Green:	0 10	10	10
Volume Module:	- - -	- - -	- - -
base Vol:	0 1787	0	56 725
growth/Adj:	1.18 1.18	1.18 1.18	1.18 1.18
initial Bse:	0 2116	0	66 858
added Vol:	0 8	0	0 1
Approved Pt:	0 1447	39	82 336
initial Fur:	0 3771	39	148 1195
User Adj:	1.00 1.00	0.00	1.00 1.00
HF Adj:	1.00 1.00	0.00	1.00 1.00
HF Volume:	0 3771	0	148 1195
reduct Vol:	0 0	0	0 0
reduced Vol:	0 3771	0	148 1195
CEC Adj:	1.00 1.00	0.00	1.00 1.00
MLF Adj:	1.00 1.00	0.00	1.00 1.00
final Vol.:	0 3771	0	148 1195
Saturation Flow Module:	- - -	- - -	- - -
sat/Lane:	1800 1800	1800	1800 1800
adjustment:	0.97 1.06	0.97	0.97 1.06
initial Sat.:	0 9500	1750	1750 5700
Capacity Analysis Module:	- - -	- - -	- - -
vol/sat:	0.00 0.40	0.00	0.08 0.21
exit Moves:	*****	*****	*****
travel Time:	0.0 373.2	0.0	7.9 45.1
volume/Cap:	0.00 1.17	0.00	1.17 0.51
delay/Veh:	0.0 117	0.0	181.4 18.6
delay/Adj:	1.00 1.00	1.00	1.00 1.00
rogue/Adjctr:	1.00 1.00	1.00	1.00 1.00
delay/Veh:	0.0 117	0.0	181.4 18.6
questionable:	0.0 170	0.0	112.6 11.3

Level Of Service Computation Report
 5 HCM Operations (Future Volume Alternative)
 AM 2013 Project Alt. 2

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 2



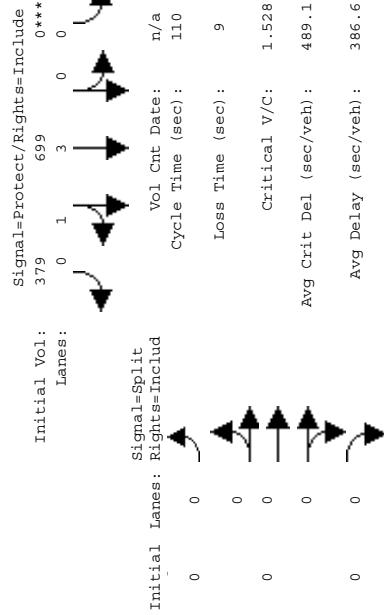
Lanes: Initial Vol: 0 0 5 0 1 3.9
0 3.771***

Approach:	North Bound	South Bound	East Bound	West Bound
L - T - R	L - T - R	L - T - R	L - T - R	
Min. Green:	0 10	10	0	0 0
Volume Module:				
Base Vol:	0 1787	0	56 725	0
Zrowth Adj:	1 18 1.18	1.18	1.18 1.18	1.18 1.18 1.18
Initial Bse:	0 2116	0	66 858	0
Added Vol:	0 109	0	20 22	0
Approved Pr:	0 1647	39	82 336	0
Approved Fut:	0 3872	39	168 1216	0
User Adj:	1 00 1.00	0.00	1.00 1.00	1.00 1.00 1.00
PHF Adj:	1 00 1.00	0.00	1.00 1.00	1.00 1.00 1.00
PHF Volume:	0 3872	0	168 1216	0
Reduced Vol:	0 0	0	0 0	0 0
Reduced Vol:	0 3872	0	168 1216	0
PZEE Adj:	1 00 1.00	0.00	1.00 1.00	1.00 1.00 1.00
MLF Adj:	1 00 1.00	0.00	1.00 1.00	1.00 1.00 1.00
Final Vol:	0 3872	0	168 1216	0
Saturation Flow Module:				
Sat/Lane:	1800 1800	1800 1800	1800 1800	1800 1800
Adjustment:	0.97 1.06	0.97	1.06 0.97	1.06 0.97 1.06
Final Sat:	0.05 5.00	1.00	3.00 0.00	2.99 0.01 0.00
Capacity Analysis Module:				
Vol/Sat:	0.00 0.41	0.00	0.10 0.221	0.00 0.62 0.62
Crit Moves:	****	****	****	****
Zgreen Time:	0 36.5	0	86 45.1	0
Volume/Cap:	0.00 1.23	0.00	1.23 0.52	0.00 1.23 1.23
Delay/Veh:	0.0 154	0	214.1 18.7	0.0 150.1 150
Delay Adj:	1.00 1.00	1.00	1.00 1.00	1.00 1.00 1.00
ProgAdjctr:	1.00 1.00	1.00	1.00 1.00	1.00 1.00 1.00
AdjDly/Veh:	0.0 154	0	214.1 18.7	0.0 150.1 150
Zgreen Time:	0 177	0	104 45.1	0 108 4

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 2

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM Peak

Intersection #17: 237 WB Ramps/Mathilda



Lanes: 1 0 4 0 0
Initial Vol: 228 6671*** 0
Signal=Protect/Rights=Include

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Min. Green: 7 10 0 10 0 0 0 0

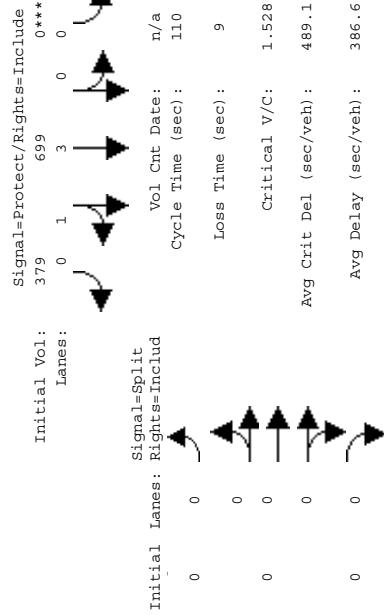
Volume Module:

Base Vol:	183 2196	0	295	64	0	0	586	3	217
Growth Adj:	1.18 1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18
Initial Bee:	217 2600	0	349	76	0	0	694	4	257
Added Vol:	0 247	0	42	27	0	0	0	0	98
Approved Pr:	11 3824	0	308	276	0	0	144	0	564
Initial Fut:	228 6671	0	699	379	0	0	838	4	919
User Adj:	1.00 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.28 6671	0	699	379	0	0	838	4	919
Reduc Vol:	0 247	0	0	0	0	0	0	0	0
Reduced Vol:	228 6671	0	699	379	0	0	838	4	919
PCE Adj:	1.00 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	228 6671	0	699	379	0	0	838	4	919

Capacity Analysis Module:

Vol/Sat:	0.13 0.88	0.00	0.00	0.12	0.22	0.00	0.00	0.24	0.53
Crit Moves:	0.971.06	0.97	0.97	1.06	0.97	0.99	1.00	0.97	1.00
Green Time:	23.7 63.2	0.0	0.0	39.5	0.0	0.0	37.8	37.8	37.8
Volume/Cap:	0.60 1.53	0.00	0.00	0.34	0.60	0.00	0.69	0.69	0.53
Delay/Veh:	31.5 4.90	0.0	0.0	19.6	22.4	0.0	24.8	24.8	42.9
ProgAdjFcrt:	1.00 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.5 4.90	0.0	0.0	19.6	22.4	0.0	24.8	24.8	42.9
DesignQueue:	11 226	0	0	28	16	0	0	36	42

Intersection #18: Mathilda/Moffett Park



Lanes: 2 0 2 1 0
Initial Vol: 593 918 1001***
Signal=Protect/Rights=Include

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Min. Green: 7 10 0 10 0 10 0 10

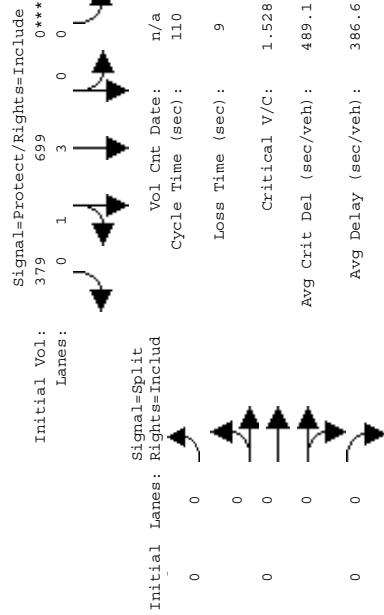
Volume Module:

Base Vol:	593 918	1001	4	117	47	21	66	82	123	31	18
Growth Adj:	1.00 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bee:	593 918	1001	4	117	47	21	66	82	123	31	18
Added Vol:	0 0	0	0	0	0	0	0	0	0	0	0
PassedByVol:	0 0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	593 918	1001	4	117	47	21	66	82	123	31	18
User Adj:	1.00 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	593 918	1001	4	117	47	21	66	82	123	31	18
Reduc Vol.:	0 0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	593 918	1001	4	117	47	21	66	82	123	31	18

Saturation Flow Module:

Sat/Lane:	1800 1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.971.06	0.97	0.97	1.06	0.97	0.99	1.00	0.97	1.06	0.97	1.00
Lanes:	1.00 4.00	0.00	0.00	3.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00
Final Sat.:	1750 7600	0	0	5700	1750	0	0	3533	17	2.00	3.00

Intersection #18: Mathilda/Moffett Park



Lanes: 2 0 2 1 0
Initial Vol: 593 918 1001***
Signal=Protect/Rights=Include

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Min. Green: 7 10 0 10 0 10 0 10

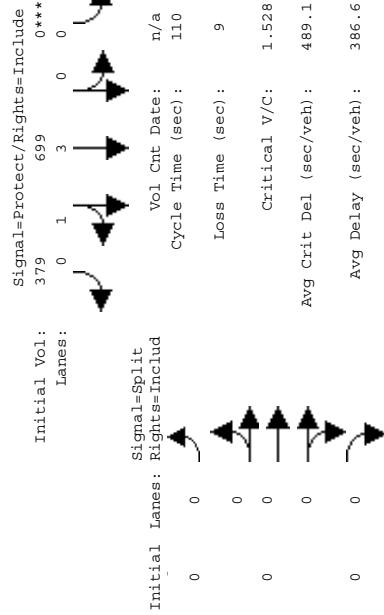
Volume Module:

Base Vol:	593 918	1001	4	117	47	21	66	82	123	31	18
Growth Adj:	1.00 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bee:	593 918	1001	4	117	47	21	66	82	123	31	18
Added Vol:	0 0	0	0	0	0	0	0	0	0	0	0
PassedByVol:	0 0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	593 918	1001	4	117	47	21	66	82	123	31	18
User Adj:	1.00 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	593 918	1001	4	117	47	21	66	82	123	31	18
Reduc Vol.:	0 0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	593 918	1001	4	117	47	21	66	82	123	31	18

Saturation Flow Module:

Sat/Lane:	1800 1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.971.06	0.97	0.97	1.06	0.97	0.99	1.00	0.97	1.06	0.97	1.00
Lanes:	2.00 2.00	1.00	1.00	3.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3150 3800	1750	1750	5700	1750	0	0	1.00	3.00	1.00	1.00

Intersection #18: Mathilda/Moffett Park



Lanes: 2 0 2 1 0
Initial Vol: 593 918 1001***
Signal=Protect/Rights=Include

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Min. Green: 7 10 0 10 0 10 0 10

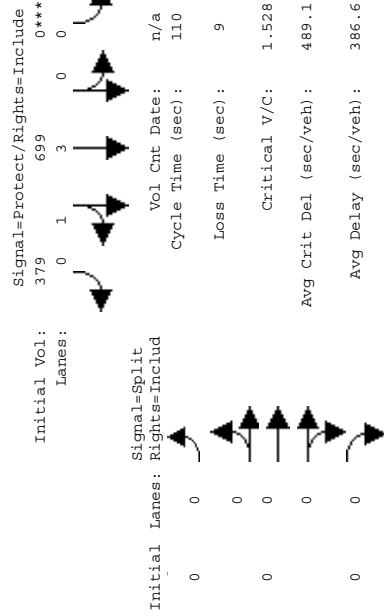
Volume Module:

Base Vol:	593 918	1001	4	117	47	21	66	82	123	31	18
Growth Adj:	1.00 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bee:	593 918	1001	4	117	47	21	66	82	123	31	18
Added Vol:	0 0	0	0	0	0	0	0	0	0	0	0
PassedByVol:	0 0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	593 918	1001	4	117	47	21	66	82	123	31	18
User Adj:	1.00 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	593 918	1001	4	117	47	21	66	82	123	31	18
Reduc Vol.:	0 0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	593 918	1001	4	117	47	21	66	82	123	31	18

Capacity Analysis Module:

Vol/Sat:	0.13 0.88	0.00	0.00	0.12	0.22	0.00	0.00	0.24	0.53	0.04	0.03
Crit Moves:	0.971.06	0.97	0.97	1.06	0.97	0.99	1.00	0.97	1.06	0.97	1.00
Green Time:	23.7 63.2	0.0	0.0	39.5	0.0	0.0	37.8	37.8	37.8	37.8	37.8
Volume/Cap:	0.60 1.53	0.00	0.00	0.34	0.60	0.00	0.69	0.69	0.53	0.19	0.30
Delay/Veh:	31.5 4.90	0.0	0.0	19.6	22.4	0.0	24.8	24.8	42.9	35.6	35.6
ProgAdjFcrt:	1.00 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.5 4.90	0.0	0.0	19.6	22.4	0.0	24.8	24.8	42.9	35.6	35.6
DesignQueue:	11 226	0	0	28	16	0	0	36	42	35.6	35.6

Intersection #18: Mathilda/Moffett Park



Lanes: 2 0 2 1 0
Initial Vol: 593 918 1001***
Signal=Protect/Rights=Include

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Min. Green: 7 10 0 10 0 10 0 10

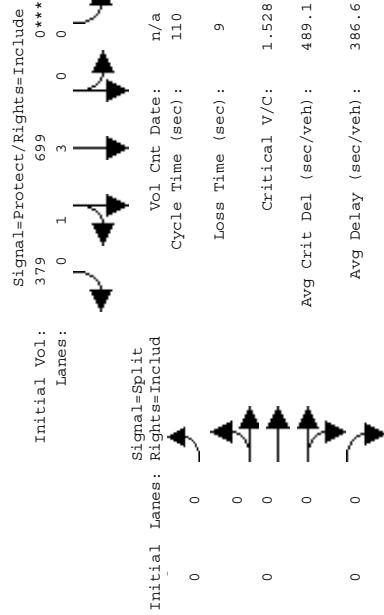
Volume Module:

Base Vol:	593 918	1001	4	117	47	21	66	82	123	31	18
Growth Adj:	1.00 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bee:	593 918	1001	4	117	47	21	66	82	123	31	18
Added Vol:	0 0	0	0	0	0	0	0	0	0	0	0
PassedByVol:	0 0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	593 918	1001	4	117	47	21	66	82	123	31	18
User Adj:	1.00 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	593 918	1001	4	117	47	21	66	82	123	31	18
Reduc Vol.:	0 0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	593 918	1001	4	117	47	21	66	82	123	31	18

Capacity Analysis Module:

Vol/Sat:	0.13 0.88	0.00	0.00	0.12	0.22	0.00	0.00	0.24	0.53	0.04	0.03
Crit Moves:	0.971.06	0.97	0.97	1.06	0.97	0.99	1.00	0.97	1.06	0.97	1.00
Green Time:	23.7 63.2	0.0	0.0	39.5	0.0	0.0	37.8	37.8	37.8	37.8	37.8
Volume/Cap:	0.60 1.53	0.00	0.00	0.34	0.60	0.00	0.69	0.69	0.53	0.19	0.30
Delay/Veh:	31.5 4.90	0.0	0.0	19.6	22.4	0.0	24.8	24.8	42.9	35.6	35.6
ProgAdjFcrt:	1.00 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.5 4.90	0.0	0.0	19.6	22.4	0.0	24.8	24.8	42.9	35.6	35.6
DesignQueue:	11 226	0	0	28	16	0	0	36	42	35.6	35.6

Intersection #18: Mathilda/Moffett Park



Lanes: 2 0 2 1 0
Initial Vol: 593 918 1001***<br

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 2

Intersection #18: Mathilda/Moffett Park

Intersection #18: Mathilda/Moffett Park

Approach: North Bound										Approach: South Bound										Approach: East Bound										Approach: West Bound																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Lanes:	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	10010	10011	10012	10013	10014	10015	10016	10017	10018	10019	10020	10021	10022	10023	10024	10025	10026	10027	10028	10029	10030	10031	10032	10033	10034	10035	10036	10037	10038	10039	10040	10041	10042	10043	10044	10045	10046	10047	10048	10049	10050	10051	10052	10053	10054	10055	10056	10057	10058	10059	10060	10061	10062	10063	10064	10065	10066	10067	10068	10069	10070	10071	10072	10073	10074	10075	10076	10077	10078	10079	10080	10081	10082	10083	10084	10085	10086	10087	10088	10089	10090	10091	10092	10093	10094	10095	10096	10097	10098	10099	100100	100101	100102	100103	100104	100105	100106	100107	100108	100109	100110	100111	100112	100113	100114	100115	100116	100117	100118	100119	100120	100121	100122	100123	100124	100125	100126	100127	100128	100129	100130	100131	100132	100133	100134	100135	100136	100137	100138	100139	100140	100141	100142	100143	100144	100145	100146	100147	100148	100149	100150	100151	100152	100153	100154	100155	100156	100157	100158	100159	100160	100161	100162	100163	100164	100165	100166	100167	100168	100169	100170	100171	100172	10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Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 2

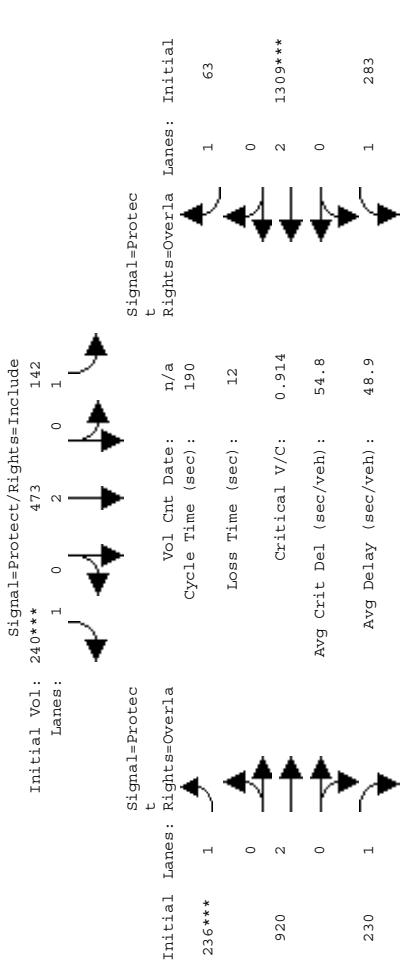
Intersection #19: Central/Mary

Signal=Protect/Rights=Include									
Initial Vol:	21***								
Lanes:	0	1	2	0	0				
Initial Lanes: Rights-Overla									
Vol Cnt Date:	n/a								
Cycle Time (sec):	180								
Loss Time (sec):	12								
Right=Overla									
Lanes: Initial									
212***	0	3	0	0	0				
Min. Green:	14	10	10	14	10	10	14	10	10
Approach: Signal=Protect/Rights=Overlap									
Movement: North Bound									
Min. Green:	148***	2	0	3	0	1	118		
Initial Vol:	148***	23							
Volume Module:									
Base Vol:	0	0	0	0	0	0	0	0	0
Growth Adj:	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18
Initial Bee:	0	0	0	0	0	0	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0
PassengerVol:	148	23	1	0	2	21	155	209	27
Initial Fut:	148	23	1.18	0	2	21	155	212	27
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	148	23	1.18	0	2	21	155	212	27
Reduced Vol:	148	23	1.18	0	2	21	155	212	27
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	148	23	1.18	0	2	21	155	212	27
Saturation Flow Module:									
Sat Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97
Lanes:	2.00	3.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	3800	1750	3150	5700	1750
Capacity Analysis Module:									
Vol/Sat:	0.05	0.00	0.07	0.00	0.00	0.01	0.05	0.04	0.02
Crit. Moves:	****			****			****		
Green Time:	70.9	89.0	103.0	0.0	18.1	18.1	69.0	65.0	135.9
Volume/Cap:	0.12	0.01	0.12	0.00	0.01	0.12	0.13	0.10	0.02
Delay/Veh:	26.4	17.6	13.4	0.6	55.4	56.0	27.4	29.0	4.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFcrr:	1.00	1.85	1.85	1.00	1.85	1.85	1.00	1.00	0.99
Addl/Veh:	26.4	32.5	24.8	0.0	102	103.6	27.4	23.0	4.2
DesgnQueue:	9	1	5	0	0	2	10	14	1

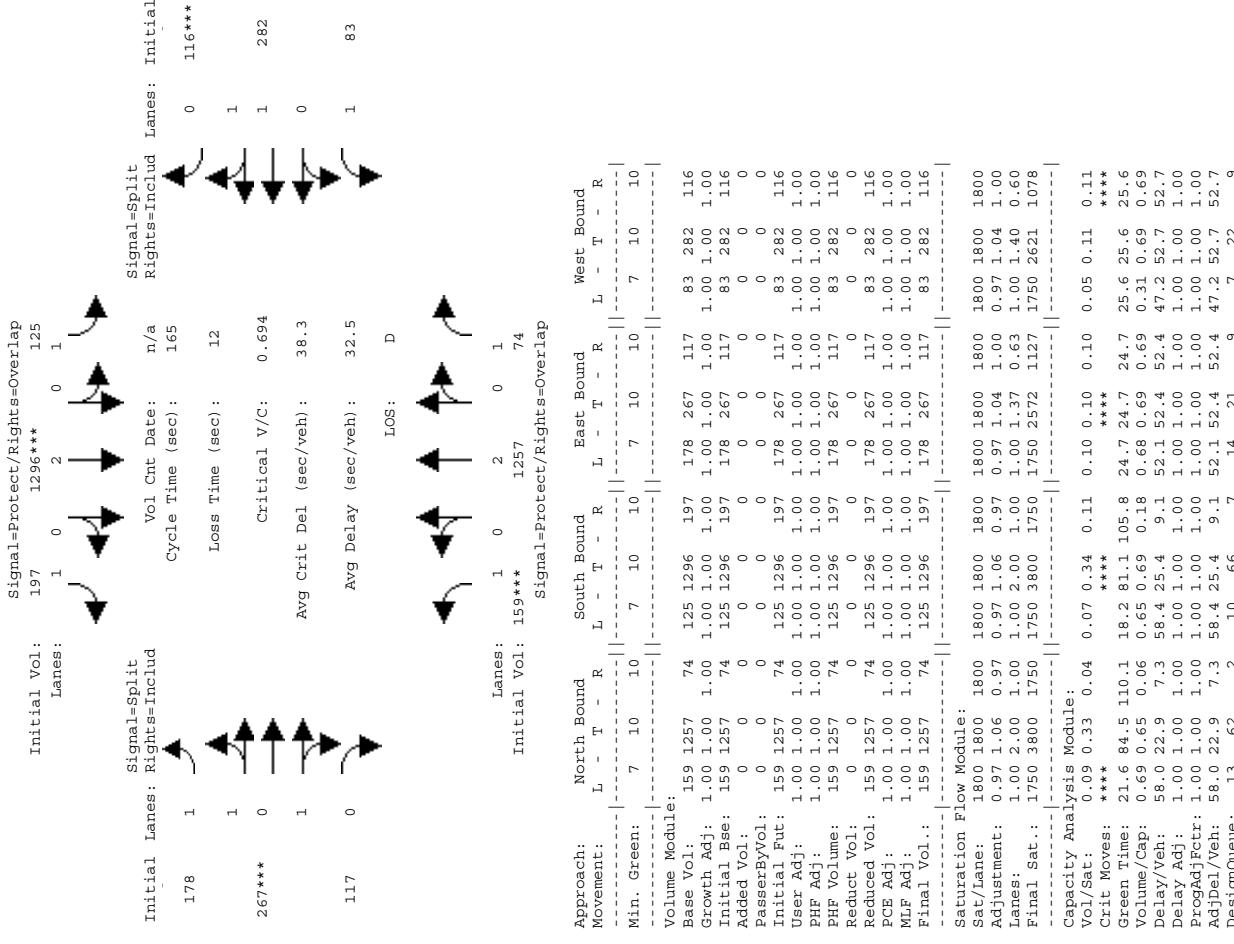
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 2

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM Peak

Intersection #1: Middlefield/Shoreline



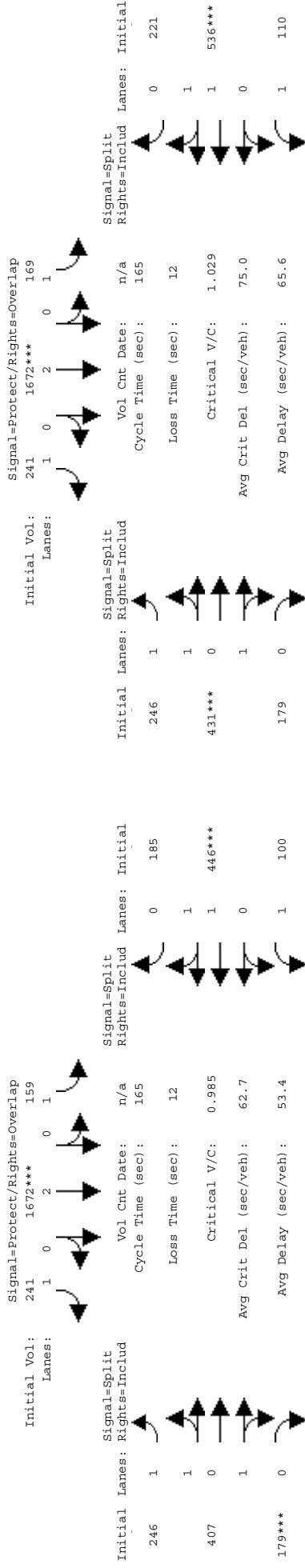
Intersection #2: Moffett/Central Expressway



Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 2

Intersection #2: Moffett/Central Expressway



Initial Vol: 253*** Lanes: 1 0 2 0 1
Signal=Protect/Rights=Overlap
Initial Vol: 1829 Lanes: 1 0 2 0 1
Signal=Protect/Rights=Overlap
Initial Vol: 88 Lanes: 1 0 2 0 1
Signal=Protect/Rights=Overlap

Approach:	North Bound	South Bound	East Bound	West Bound	Approach:	North Bound	South Bound	East Bound	West Bound										
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	Movement:	L - T - R	L - T - R	L - T - R	L - T - R										
Min. Green:	14 10 10 14 10 10 14 10 10 10	14 10 10 14 10 10 14 10 10 10	14 10 10 14 10 10 14 10 10 10	14 10 10 14 10 10 14 10 10 10	Min. Green:	14 10 10 14 10 10 14 10 10 10	14 10 10 14 10 10 14 10 10 10	14 10 10 14 10 10 14 10 10 10	14 10 10 14 10 10 14 10 10 10										
Volume Module:					Volume Module:														
Base Vol:	159 1257	74	125 1296	197	Base Vol:	159 1257	74	125 1296	197	Base Vol:	125 1296	197	178	267	117	83	282	116	
Growth Adj:	1.18 1.18	1.18	1.18 1.18	1.18	Growth Adj:	1.18 1.18	1.18	1.18 1.18	1.18	Growth Adj:	1.18 1.18	1.18	1.18 1.18	1.18	1.18	1.18	1.18	1.18	
Initial Bee:	188 1488	88	148 1554	233	Initial Bee:	188 1488	88	148 1554	233	Initial Bee:	188 1488	88	148 1554	233	136	139	98	334	137
Added Vol:	0 0	0	2 0	0	Added Vol:	0 0	0	3 0	0	Added Vol:	0 0	0	3 0	0	30	0	12	128	51
Approved Pr:	65 341	0	9 138	8	Approved Pr:	65 341	0	9 138	8	Approved Pr:	65 341	0	9 138	8	85	40	0	74	33
Initial Fut:	253 1829	88	159 1672	241	Initial Fut:	253 1829	91	169 1672	241	Initial Fut:	253 1829	91	169 1672	241	246	431	179	110	536
User Adj:	1.00 1.00	1.00	1.00 1.00	1.00	User Adj:	1.00 1.00	1.00	1.00 1.00	1.00	User Adj:	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00	1.00	1.00	
PHF Adj:	1.00 1.00	1.00	1.00 1.00	1.00	PHF Adj:	1.00 1.00	1.00	1.00 1.00	1.00	PHF Adj:	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00	1.00	1.00	
PHF Volume:	253 1829	88	159 1672	241	PHF Volume:	253 1829	91	169 1672	241	PHF Volume:	253 1829	91	169 1672	241	246	431	179	110	536
Reducit Vol:	0 0	0	0 0	0	Reducit Vol:	0 0	0	0 0	0	Reducit Vol:	0 0	0	0 0	0	0	0	0	0	
Reduced Vol:	253 1829	88	159 1672	241	Reduced Vol:	253 1829	91	169 1672	241	Reduced Vol:	253 1829	91	169 1672	241	246	431	179	110	536
PCE Adj:	1.00 1.00	1.00	1.00 1.00	1.00	PCE Adj:	1.00 1.00	1.00	1.00 1.00	1.00	PCE Adj:	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00	1.00	1.00	
MLF Adj:	1.00 1.00	1.00	1.00 1.00	1.00	MLF Adj:	1.00 1.00	1.00	1.00 1.00	1.00	MLF Adj:	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00	1.00	1.00	
Final Vol.:	253 1829	88	159 1672	241	Final Vol.:	253 1829	91	169 1672	241	Final Vol.:	253 1829	91	169 1672	241	246	431	179	110	536
Saturation Flow Module:					Saturation Flow Module:					Saturation Flow Module:									
Vol/Sat:	0.14 0.48	0.05	0.09 0.44	0.14	Vol/Sat:	0.14 0.48	0.05	0.10 0.44	0.14	Vol/Sat:	0.14 0.48	0.05	0.10 0.44	0.14	0.16	0.06	0.20	0.20	
Crit Moves:	*****	*****	*****	*****	Crit Moves:	*****	*****	*****	*****	Crit Moves:	*****	*****	*****	*****	*****	*****	*****	*****	
Green Time:	24.2 82.4	110.9	15.5 73.7	100.0	Green Time:	23.2 78.1	110.9	15.7 67.6	97.0	Green Time:	23.2 78.1	110.9	15.7 67.6	97.0	26.4	28.4	32.8	32.8	
Volume/Cap:	0.99 0.96	0.07	0.96 0.99	0.23	Volume/Cap:	1.03 1.02	0.08	1.02 1.03	0.23	Volume/Cap:	1.03 1.02	0.08	1.02 1.03	0.23	0.88	1.03	1.03	1.03	
Delay/Veh:	92.6 40.2	7.1	100.4 48.2	11.2	Delay/Veh:	107.2 53.9	7.1	116.6 61.2	12.4	Delay/Veh:	107.2 53.9	7.1	116.6 61.2	12.4	84.6	43.1	83.8	83.8	
ProgAdjFctr:	1.00 1.00	1.00	1.00 1.00	1.00	ProgAdjFctr:	1.00 1.00	1.00	1.00 1.00	1.00	ProgAdjFctr:	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00	1.00	1.00	
AddDel/Veh:	92.6 40.2	7.1	100.4 48.2	11.2	AddDel/Veh:	107.2 53.9	7.1	116.6 61.2	12.4	AddDel/Veh:	107.2 53.9	7.1	116.6 61.2	12.4	84.6	43.1	83.8	83.8	
DesInqueue:	21 96	3	13 96	9	DesInqueue:	21 101	3	14 99	9	DesInqueue:	21 101	3	14 99	9	20	35	14	42	

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM Peak

Level Of Service Computation Report
985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

Figure 1 displays a comparison of signalized and protected right-of-way scenarios across four initial lane configurations (0, 1, 2, and 3 lanes for the right-moving traffic). The figure is organized into two rows: the top row represents 'Signal=Protected/Rights-Included' and the bottom row represents 'Signal=Protected/Rights-Excluded'. Each row contains four diagrams corresponding to the initial lane counts.

Top Row (Signal=Protected/Rights-Included):

- Initial Vol:** 160 Lanes: 0, 1, 2, 3
- Vol Cnt Date:** 181 1 0 1
- Cycle Time (sec):** n/a 100
- Loss Time (sec):** 12
- Critical V/C:** 0.713
- Avg Crit Del (sec/veh):** 26.5
- Avg Delay (sec/veh):** 25.5
- D+:** LOS

Bottom Row (Signal=Protected/Rights-Excluded):

- Initial Vol:** 242*** Lanes: 1
- Vol Cnt Date:** 181 1 0 1
- Cycle Time (sec):** n/a 100
- Loss Time (sec):** 12
- Critical V/C:** 0.713
- Avg Crit Del (sec/veh):** 26.5
- Avg Delay (sec/veh):** 25.5
- D+:** LOS

Initial Vol.:		Lanes:	1	0	1	1	0	275
		Signal=Protect/Rights=Include	4.22***					
Approach:		North Bound	South Bound	East Bound	West Bound			
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R			
Min. Green:	7 10	10	7 10	10	7 10	10	7	10
Volume Module:								
Base Vol.:	108 462	275	72 181	160	242 743	87	184	809
Growth Adj.:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00
Initial Bse.:	108 462	275	72 181	160	242 743	87	184	809
Added Vol.:	0 0	0	0 0	0	0 0	0	0	0
PasserbyVol.:	0 0	0	0 0	0	0 0	0	0	0
Initial Fut.	108 462	275	72 181	160	242 743	87	184	809
User Adj.:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00
PHF Adj.:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00
PHF Volume:	108 462	275	72 181	160	242 743	87	184	809
Reduc Vol.:	0 0	0	0 0	0	0 0	0	0	0
Reduced Vol.:	108 462	275	72 181	160	242 743	87	184	809
PCE Adj.:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00
MLF Adj.:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00
Final Vol.:	108 462	275	72 181	160	242 743	87	184	809
Saturation Flow Module:								
Sat/Lane:	1800 1800	1800	1800 1800	1800	1800 1800	1800	1800	1800
Adj/Setting:	0.97 1.04	1.00	0.97 1.05	1.00	0.97 1.03	1.00	0.97	1.03
Lanes:	1.00 1.23	0.77	1.00 1.04	0.96	1.00 1.78	0.22	1.00	1.75
Final Sat.:	1750 2318	1380	1750 1963	1735	1750 3312	388	1750	3250

Capacity Analysis Module:									
Vol/Sat:	0..0.6	0..0.20	0..0.04	0..0.09	0..0.09	0..14	0..22	0..22	0..11
Crit Moves:	****	****	****	****	****	****	****	****	****
Green Time:	14.42	27.5	27.5	7.0	20.3	20.3	19.1	36.4	36.4
Volume/Cap:	0.43	0.72	0.72	0.59	0.45	0.45	0.72	0.62	0.62
Delay/Veh:	30.16	26.7	26.7	39.3	26.9	26.9	34.0	20.4	20.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdj/Fctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Del/Veh:	30.16	26.7	26.7	39.3	26.9	26.9	34.0	20.4	20.4
Adj Del/Veh:	30.16	26.7	26.7	39.3	26.9	26.9	34.0	20.4	20.4

Level Of Service Computation Report
985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

Figure 1 displays a comparison of signalized and protected right-of-way scenarios across four initial lane configurations (0, 1, 2, and 3 lanes for the right-moving traffic). The top row shows the 'Signal=Protected/Rights-Included' scenario, while the bottom row shows the 'Signal=Protected/Rights-Excluded' scenario. Each diagram illustrates the signal timing and protected phase duration for the different initial lane configurations.

Initial Vol:	Lanes:	Vol Cnt	Date:	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):	D+ Lanes:
160	0	181	1	n/a	100		26.5	25.5	1
242***	1	1	1	12		0.713			1
743	0	1	1						1
87	1	1	1						1
	1	1	1						1

Initial Vol.:		Lanes:	1	0	1	1	0	275
		Signal=Protect/Rights=Include	4.22***					
Approach:		North Bound	South Bound	East Bound	West Bound			
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R			
Min. Green:	7 10	10	7 10	10	7 10	10	7	10
Volume Module:								
Base Vol.:	108 462	275	72 181	160	242 743	87	184	809
Growth Adj.:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00
Initial Bse.:	108 462	275	72 181	160	242 743	87	184	809
Added Vol.:	0 0	0	0 0	0	0 0	0	0	0
PasserbyVol.:	0 0	0	0 0	0	0 0	0	0	0
Initial Fut.	108 462	275	72 181	160	242 743	87	184	809
User Adj.:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00
PHF Adj.:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00
PHF Volume:	108 462	275	72 181	160	242 743	87	184	809
Reduc Vol.:	0 0	0	0 0	0	0 0	0	0	0
Reduced Vol.:	108 462	275	72 181	160	242 743	87	184	809
PCE Adj.:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00
MLF Adj.:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00
Final Vol.:	108 462	275	72 181	160	242 743	87	184	809
Saturation Flow Module:								
Sat/Lane:	1800 1800	1800	1800 1800	1800	1800 1800	1800	1800	1800
Adj/Setting:	0.97 1.04	1.00	0.97 1.05	1.00	0.97 1.03	1.00	0.97	1.03
Lanes:	1.00 1.23	0.77	1.00 1.04	0.96	1.00 1.78	0.22	1.00	1.75
Final Sat.:	1750 2318	1380	1750 1963	1735	1750 3312	388	1750	3250

Capacity Analysis Module:									
Vol/Sat:	0..0.6	0..0.20	0..0.04	0..0.09	0..0.09	0..0.14	0..0.22	0..0.22	0..0.11
Crit Moves:	****	****	****	****	****	****	****	****	****
Green Time:	14.42	27.5	27.5	7.0	20.3	20.3	19.1	36.4	36.4
Volume/Cap:	0.43	0.72	0.72	0.59	0.45	0.45	0.72	0.62	0.62
Delay/Veh:	30.16	26.7	26.7	39.3	26.9	26.9	34.0	20.4	20.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdj/Fctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Del/Veh:	30.16	26.7	26.7	39.3	26.9	26.9	34.0	20.4	20.4
Adj Del/Veh:	30.16	26.7	26.7	39.3	26.9	26.9	34.0	20.4	20.4

Lev
HCM
1985

Signal=Protected/Rights-Included

Initial Vol:	160	181	72***
Lanes:	0	1	0
Loss Time (sec):	12		
Critical V/C:	0.713		
Avg Crit Del (sec/veh):	26.5		
Avg Delay (sec/veh):	25.5		
D+:			LOS.

Signal=Protected/Rights-Included

Initial Vol:	181	1	0
Lanes:	1	1	1
Loss Time (sec):	12		
Critical V/C:	0.713		
Avg Crit Del (sec/veh):	26.5		
Avg Delay (sec/veh):	25.5		
D+:			LOS.

Initial Vol.:		Lanes:	1	0	1	1	0	275
		Signal=Protect/Rights=Include	4.22***					
Approach:		North Bound	South Bound	East Bound	West Bound			
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R			
Min. Green:	7 10	10	7 10	10	7 10	10	7	10
Volume Module:								
Base Vol.:	108 462	275	72 181	160	242 743	87	184	809
Growth Adj.:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00
Initial Bse.:	108 462	275	72 181	160	242 743	87	184	809
Added Vol.:	0 0	0	0 0	0	0 0	0	0	0
PasserbyVol.:	0 0	0	0 0	0	0 0	0	0	0
Initial Fut.	108 462	275	72 181	160	242 743	87	184	809
User Adj.:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00
PHF Adj.:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00
PHF Volume:	108 462	275	72 181	160	242 743	87	184	809
Reduc Vol.:	0 0	0	0 0	0	0 0	0	0	0
Reduced Vol.:	108 462	275	72 181	160	242 743	87	184	809
PCE Adj.:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00
MLF Adj.:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00
Final Vol.:	108 462	275	72 181	160	242 743	87	184	809
Saturation Flow Module:								
Sat/Lane:	1800 1800	1800	1800 1800	1800	1800 1800	1800	1800	1800
Adj/Setting:	0.97 1.04	1.00	0.97 1.05	1.00	0.97 1.03	1.00	0.97	1.03
Lanes:	1.00 1.23	0.77	1.00 1.04	0.96	1.00 1.78	0.22	1.00	1.75
Final Sat.:	1750 2318	1380	1750 1963	1735	1750 3312	388	1750	3250

Capacity Analysis Module:									
Vol/Sat:	0..0.6	0..0.20	0..0.04	0..0.09	0..0.09	0..0.14	0..0.22	0..0.22	0..0.11
Crit Moves:	****	****	****	****	****	****	****	****	****
Green Time:	14.42	27.5	27.5	7.0	20.3	20.3	19.1	36.4	36.4
Volume/Cap:	0.43	0.72	0.72	0.59	0.45	0.45	0.72	0.62	0.62
Delay/Veh:	30.16	26.7	26.7	39.3	26.9	26.9	34.0	20.4	20.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdj/Fctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Del/Veh:	30.16	26.7	26.7	39.3	26.9	26.9	34.0	20.4	20.4
Adj Del/Veh:	30.16	26.7	26.7	39.3	26.9	26.9	34.0	20.4	20.4

Level Of Service Computation Report
985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

Figure 1 displays a comparison of signalized and protected right-of-way scenarios across four initial lane configurations (0, 1, 2, and 3 lanes for the right-moving traffic). The top row shows the 'Signal=Protected/Rights-Included' scenario, while the bottom row shows the 'Signal=Protected/Rights-Excluded' scenario. Each diagram illustrates the signal timing and protected phase duration for the different initial lane configurations.

Initial Vol:	Lanes:	Vol Cnt	Date:	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):	D+ Lanes:
160	0	181	1	n/a	100		26.5	25.5	1
242***	1	1	1	12		0.713			1
743	0	1	1						1
87	1	1	1						1
	1	1	1						1

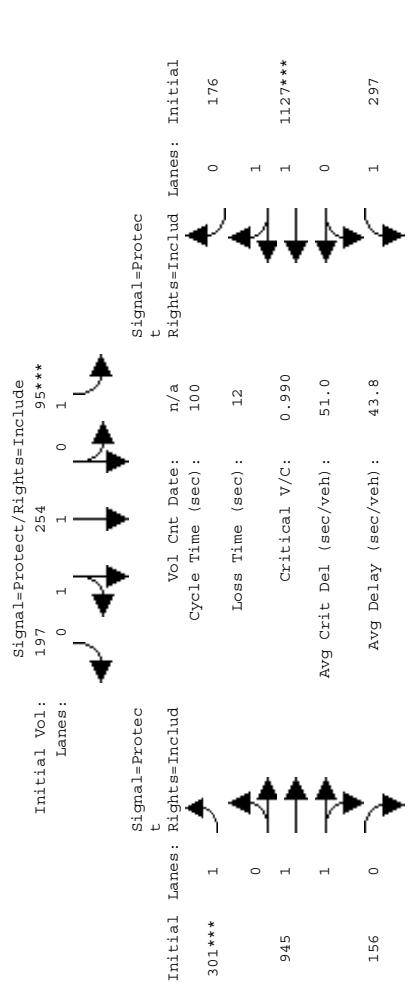
Initial Vol.:		Lanes:	1	0	1	1	0	275
		Signal=Protect/Rights=Include	4.22***					
Approach:		North Bound	South Bound	East Bound	West Bound			
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R			
Min. Green:	7 10	10	7 10	10	7 10	10	7	10
Volume Module:								
Base Vol.:	108 462	275	72 181	160	242 743	87	184	809
Growth Adj.:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00
Initial Bse.:	108 462	275	72 181	160	242 743	87	184	809
Added Vol.:	0 0	0	0 0	0	0 0	0	0	0
PasserbyVol.:	0 0	0	0 0	0	0 0	0	0	0
Initial Fut.	108 462	275	72 181	160	242 743	87	184	809
User Adj.:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00
PHF Adj.:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00
PHF Volume:	108 462	275	72 181	160	242 743	87	184	809
Reduc Vol.:	0 0	0	0 0	0	0 0	0	0	0
Reduced Vol.:	108 462	275	72 181	160	242 743	87	184	809
PCE Adj.:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00
MLF Adj.:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00
Final Vol.:	108 462	275	72 181	160	242 743	87	184	809
Saturation Flow Module:								
Sat/Lane:	1800 1800	1800	1800 1800	1800	1800 1800	1800	1800	1800
Adj/Setting:	0.97 1.04	1.00	0.97 1.05	1.00	0.97 1.03	1.00	0.97	1.03
Lanes:	1.00 1.23	0.77	1.00 1.04	0.96	1.00 1.78	0.22	1.00	1.75
Final Sat.:	1750 2318	1380	1750 1963	1735	1750 3312	388	1750	3250

Capacity Analysis Module:									
Vol/Sat:	0..0.6	0..0.20	0..0.04	0..0.09	0..0.09	0..0.14	0..0.22	0..0.22	0..0.11
Crit Moves:	****	****	****	****	****	****	****	****	****
Green Time:	14.42	27.5	27.5	7.0	20.3	20.3	19.1	36.4	36.4
Volume/Cap:	0.43	0.72	0.72	0.59	0.45	0.45	0.72	0.62	0.62
Delay/Veh:	30.16	26.7	26.7	39.3	26.9	26.9	34.0	20.4	20.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdj/Fctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Del/Veh:	30.16	26.7	26.7	39.3	26.9	26.9	34.0	20.4	20.4
Adj Del/Veh:	30.16	26.7	26.7	39.3	26.9	26.9	34.0	20.4	20.4

Level Of Service Computation Report
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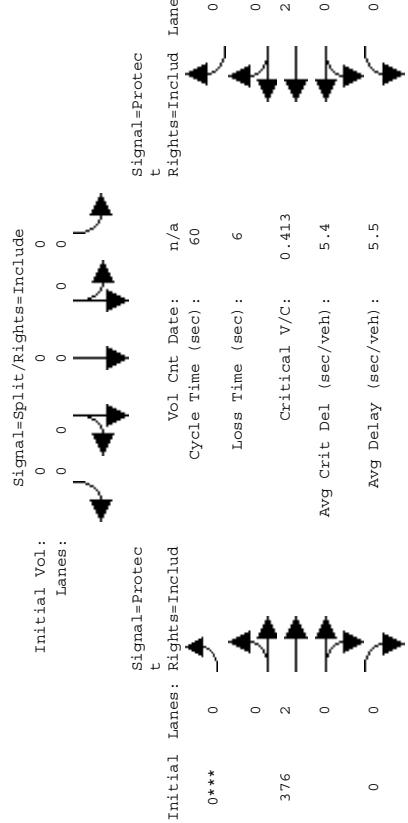
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM Peak

Intersection #3: Moffett/Middlefield

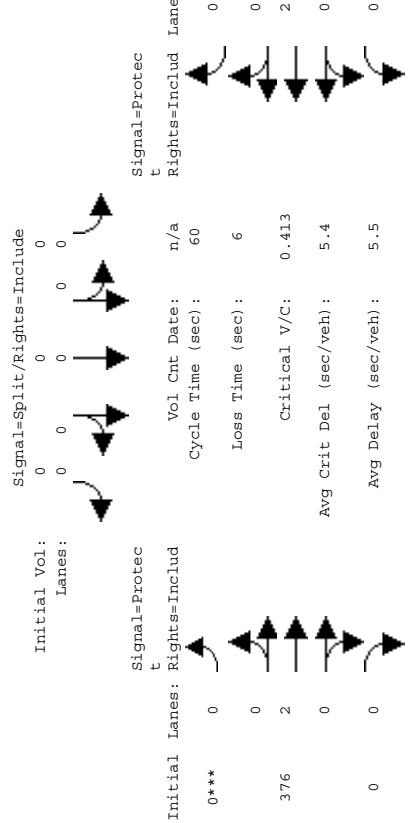


Approach:	North Bound	South Bound	East Bound	West Bound
Initial Vol:	197	254	0	95***
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	7	10	10	7
Volume Module:				
Base Vol:	108	462	275	72
Growth Adj:	1.18	1.18	1.18	1.18
Initial Bee:	128	547	326	85
Added Vol:	28	8	19	10
Approved Pr:	98	184	0	39
Initial Fut:	244	739	345	95
User Adj:	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00
PHF Volume:	244	739	345	95
Reduced Vol:	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00
Final Vol.:	244	739	345	95
Saturation Flow Module:				
Sat/Lane:	1800	1800	1800	1800
Adjustment:	0.97	1.04	1.00	0.97
Lanes:	1.00	1.35	0.65	1.00
Final Sat.:	1750	2522	1177	1750
Capacity Analysis Module:				
Vol/Sat:	0.14	0.29	0.29	0.05
Crit Moves:	*****	*****	*****	*****
Green Time:	19.2	29.0	29.0	7.0
Volume/Cap:	0.73	1.01	1.01	0.78
Delay/Veh:	50.3	50.3	51.9	32.9
Delay Adj:	1.00	1.00	1.00	1.00
ProgAdjFcrr:	1.00	1.00	1.00	1.00
AddJl/Veh:	32.0	50.3	51.9	32.9
DesignQueue:	11	32	15	12

Intersection #4: Moffett/85 NB Ramp

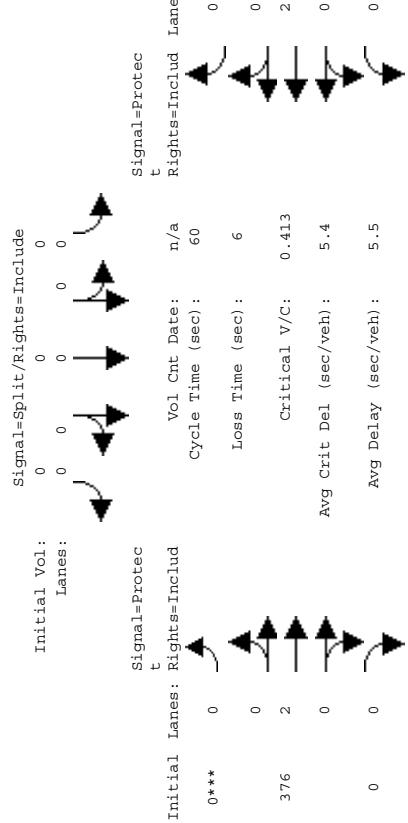


Intersection #4: Moffett/85 NB Ramp



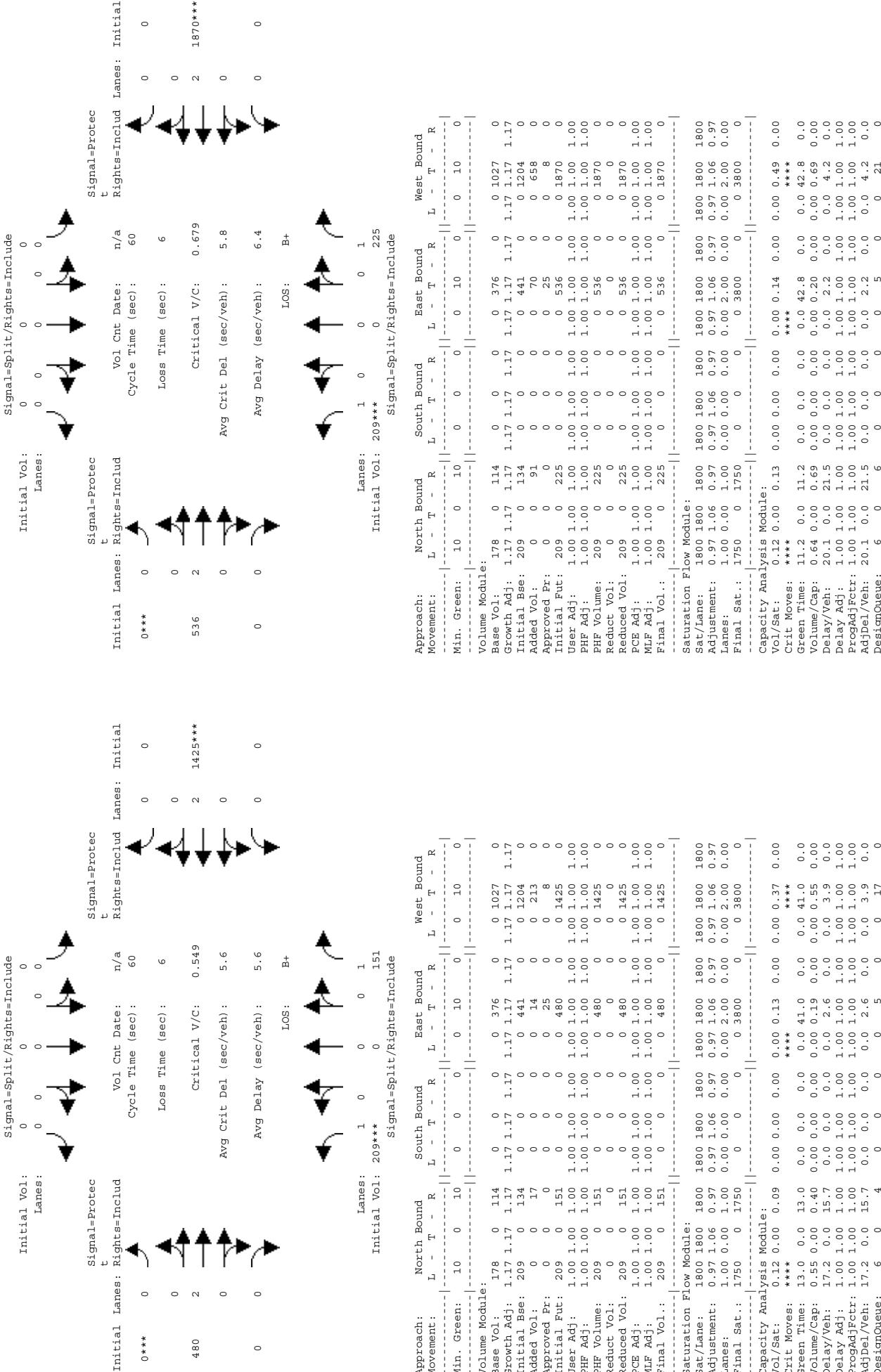
Intersection #4: Moffett/85 NB Ramp

Intersection #4: Moffett/85 NB Ramp



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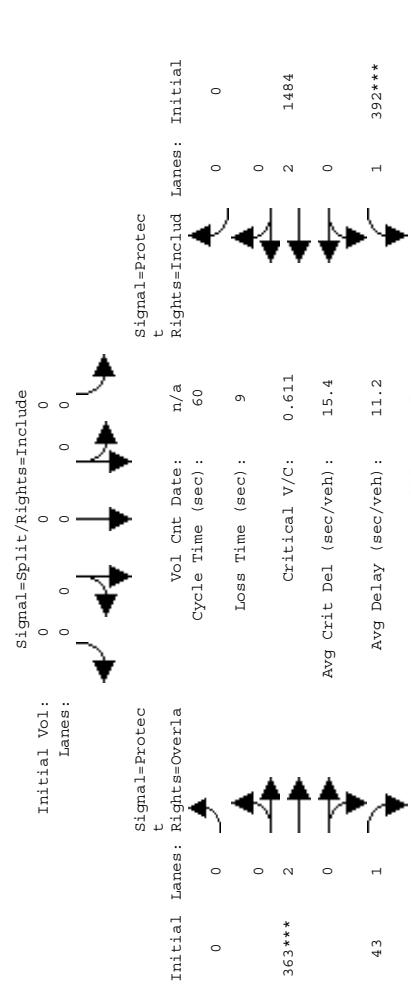
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 2

Intersection #5: Moffett/101 SB Ramps
Intersection #6: Moffett/101 NB Ramps
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)

Approach:		North Bound		South Bound		East Bound		West Bound			
Movement:	L - T - R	L - T	R	L	- T - R	L	- T	R	L	- T - R	
Min. Green:	10	0	10	0	0	0	10	0	7	10	0
Volume Module:											
Base Vol:	263	0	133	0	1	0	389	294	344	829	0
Growth Adj:	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17
Initial Bee:	308	0	156	0	0	0	456	345	403	972	0
Added Vol:	0	0	89	0	0	0	160	503	658	0	0
Approved Pr:	9	0	264	0	0	0	19	25	62	29	0
Initial Fut:	317	0	1.00	1.00	1.00	1.00	0.00	635	370	968	1659
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	317	0	264	0	0	0	635	0	968	1659	0
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	317	0	264	0	0	0	635	0	968	1659	0
Saturation Flow Module:											
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	0.97	1.06	0.97	0.97	1.06	0.97	1.06	0.97	1.06	0.97
Lanes:	1.00	0.00	1.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00	1.00
Final Sat.:	1750	0	1750	0	0	0	3800	1750	3800	0	0
Capacity Analysis Module:											
Vol/Sat:	0.18	0.00	0.15	0.00	0.00	0.00	0.17	0.00	0.55	0.44	0.00
Crit. Moves:	*****						*****				*****
Green Time:	1.01	0.0	41.0	0.0	0.0	0.0	10.0	0.0	41.0	0.0	0.0
Volume/Cap:	1.07	0.00	0.22	0.00	0.00	0.00	1.00	0.00	0.08	0.00	0.00
Delay/Veh:	84.6	0.0	2.7	0.0	0.0	0.0	47.1	0.0	2.4	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFcrr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AddJl/Veh:	84.6	0.0	2.7	0.0	0.0	0.0	47.1	0.0	2.4	0.0	0.0
DesignQueue:	9	0	3	0	0	0	18	20	0	0	17

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 2



Signal=Split/Rights=Overlap

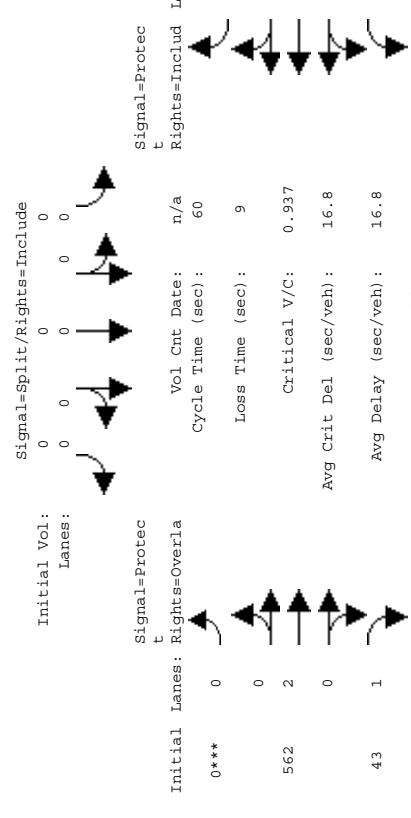
Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Min. Green: 10 0 10 0 10 0 10 0 10 0 10 0 10 0 10 0

Volume Module:

Base Vol:	298	0	95	0	0	242	0	95	0	0	242	0	216	875	0		
Growth Adj:	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17		
Initial Bee:	349	0	111	0	0	284	0	253	1026	0	111	0	0	284	0		
Added Vol:	0	0	24	0	0	0	0	129	375	0	0	123	0	0	249	0	
Approved Pr:	0	0	65	0	0	0	29	43	10	83	0	0	65	0	0	29	43
Initial Fut:	349	0	200	0	0	0	0	363	43	392	1484	0	0	299	0	0	43
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHF Volume:	349	0	200	0	0	0	0	363	43	392	1484	0	0	299	0	0	43
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Final Vol.:	349	0	200	0	0	0	0	363	43	392	1484	0	0	299	0	0	43



Signal=Split/Rights=Overlap

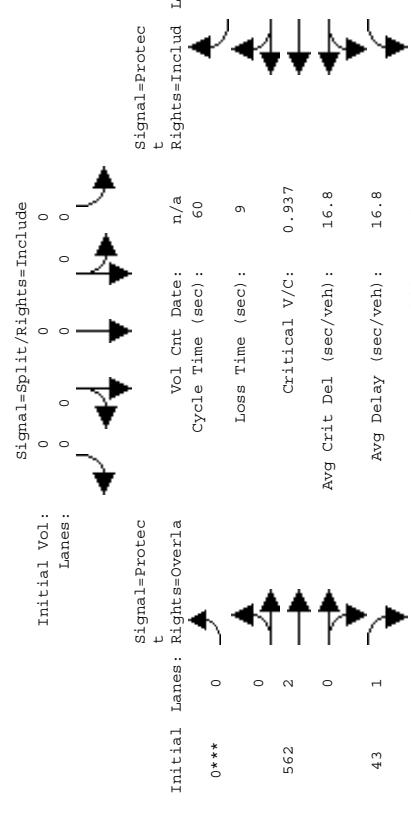
Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Min. Green: 10 0 10 0 10 0 10 0 10 0 10 0 10 0 10 0

Volume Module:

Base Vol:	298	0	95	0	0	242	0	95	0	0	242	0	216	875	0				
Growth Adj:	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17				
Initial Bee:	349	0	111	0	0	284	0	253	1026	0	111	0	0	284	0	253	1026		
Added Vol:	0	0	24	0	0	0	0	129	375	0	0	123	0	0	249	0	369	1161	
Approved Pr:	0	0	65	0	0	0	29	43	10	83	0	0	65	0	0	29	43	10	83
Initial Fut:	349	0	200	0	0	0	0	363	43	392	1484	0	0	299	0	0	43	632	2270
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	349	0	200	0	0	0	0	363	43	392	1484	0	0	299	0	0	43	632	2270
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	349	0	200	0	0	0	0	363	43	392	1484	0	0	299	0	0	43	632	2270



Signal=Split/Rights=Include

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Min. Green: 10 0 10 0 10 0 10 0 10 0 10 0 10 0 10 0

Volume Module:

Base Vol:	298	0	95	0	0	242	0	95	0	0	242	0	216	875	0				
Growth Adj:	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17				
Initial Bee:	349	0	111	0	0	284	0	253	1026	0	111	0	0	284	0	253	1026		
Added Vol:	0	0	24	0	0	0	0	129	375	0	0	123	0	0	249	0	369	1161	
Approved Pr:	0	0	65	0	0	0	29	43	10	83	0	0	65	0	0	29	43	10	83
Initial Fut:	349	0	200	0	0	0	0	363	43	392	1484	0	0	299	0	0	43	632	2270
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	349	0	200	0	0	0	0	363	43	392	1484	0	0	299	0	0	43	632	2270
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	349	0	200	0	0	0	0	363	43	392	1484	0	0	299	0	0	43	632	2270

Saturation Flow Module:

Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	1.06	0.97	1.06	0.97	1.06	0.97	1.06	0.97	1.06	0.97	1.06	0.97	1.06	0.97	1.06	0.97
Lanes:	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Final Sat.:	1.750	0	1.750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.750

Capacity Analysis Module:

Vol/Sat:	0.20	0.00	0.11	0.00	0.00	0.00	0.10	0.02	0.22	0.39	0.00	0.00	0.00	0.00	0.15	0.02	0.36	0.60	0.00	
Crit Moves:	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	
Green Time:	19.3	0.0	41.0	0.0	0.0	0.0	0.0	0.0	29.3	21.7	31.7	0.0	0.0	0.0	0.0	0.0	0.0	22.8	38.2	0.0
Volume/Cap:	0.62	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.05	0.62	0.74	0.00	0.00	0.00	0.00	0.06	0.07	0.94	0.00	
Delay/Veh:	1.45	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.18	6.1	13.3	9.4	0.0	0.0	0.0	0.0	0.28	0.8	0.00	
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
ProgAdjFcrr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Addl/Veh:	14.6	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.18	6.1	13.3	9.4	0.0	0.0	0.0	0.0	0.28	0.9	0.00	
DesignQueue:	8	0	2	0	0	0	0	0	0	10	1	26	0	0	0	0	0	1	12	

DesignQueue:

Signal=Split/Rights=Include

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Min. Green: 10 0 10 0 10 0 10 0 10 0 10 0 10 0

Volume Module:

Base Vol:	0.20	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.07	0.94	0.00
Green Time:	12.8	0.0	41.0	0.0	0.0	0.0	0.0	0.0	0.62	0.74	0.00	0.00	0.00	0.00	0.00	0.06	0.07	0.94	0.00
Volume/Cap:	0.94	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.05	0.62	0.74	0.00	0.00	0.00	0.00	0.06	0.07	0.94	0.00
Delay/Veh:	4.0	0.1	12.3	0.0	0.0	0.0	0.0	0.0	0.18	6.1	13.3	9.4	0.0	0.0	0.0	0.0	0.28	0.8	0.00
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFcrr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Addl/Veh:	4.0	0.1	2.8	0.0	0.0	0.0	0.0	0.0	0.18	6.1	13.3	9.4	0.0	0.0	0.0	0.0	0.28	0.9	0.00
DesignQueue:	10	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	12

DesignQueue:

Signal=Split/Rights=Overlap

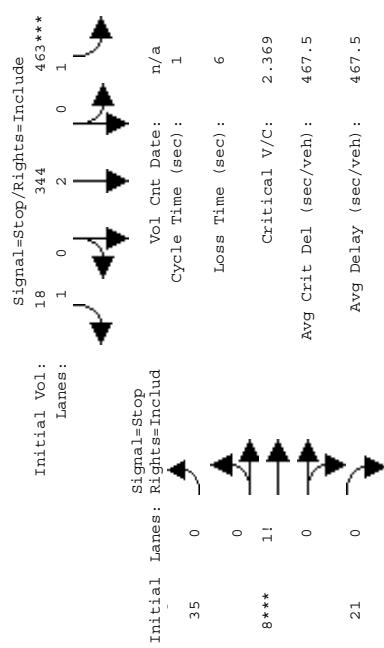
Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L

Level Of Service Computation Report
1997 HCM 4-Way Stop (Future Volume Alternative)
PM 2013 Project Alt. 2

Level Of Service Computation Report
HCM Operations (Future Volume Alternative)
PM Peak

Turbulence in the magnetosphere 107



Lanes: 0 1 0 1 0
 Initial Vol: 12***
 -Initial Vol:
 Signal-String/Printers-Include

Initial Vol: 219*** Lanes: 1 0 2 0 1 67
Initial Lanes: Signal=Permit Rights=Includ 77 1 0 2 0 1 66
Initial Vol: 507 Lanes: 1 0 2 0 1 67
Initial Lanes: Signal=Permit Rights=Includ 77 1 0 2 0 1 66

Loss Time (sec): 9 Critical V/C: 0.420
Cycle Time (sec): 85 Avg Crit Del (sec/veh): 16.7
Avg Delay (sec/veh): 12.6
LOS: B

Initial Vol: 259*** Lanes: 1 0 2 0 1 63
Initial Lanes: Signal=Protect/Rights=Includ 53 1 0 2 0 1 63

North Bound South Bound East Bound West Bound
L - T - R L - T - R L - T - R L - T - R
-----|-----|-----|-----|-----|-----|-----|-----|
Min. Green: 7 10 10 7 10 10 10 10 10 10

Approach: Movement: Volume Module:
Base Vol: 259 845 63 67 507 219 77 91 53 67 190 66
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 259 845 63 67 507 219 77 91 53 67 190 66
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 259 845 63 67 507 219 77 91 53 67 190 66
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 259 845 63 67 507 219 77 91 53 67 190 66
Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLP Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.: 259 845 63 67 507 219 77 91 53 67 190 66

Saturation Flow Module:
Sat./Lane: 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800
Adjustment: 0.92 1.06 0.83 0.92 1.06 0.83 0.65 1.06 0.83 0.61 1.00 0.96
Lanes: 1.00 2.00 1.00 2.00 1.00 2.00 1.00 2.00 1.00 2.00 1.00 1.47 0.53
Final Sat.: 1662 3800 1487 1662 3800 1487 1172 3800 1487 1452 2636 916

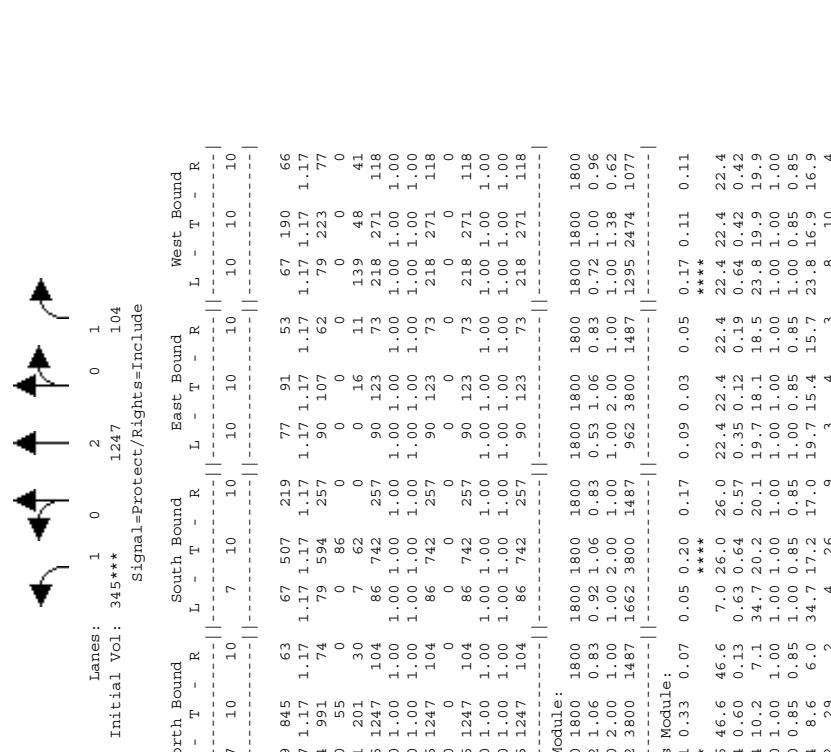
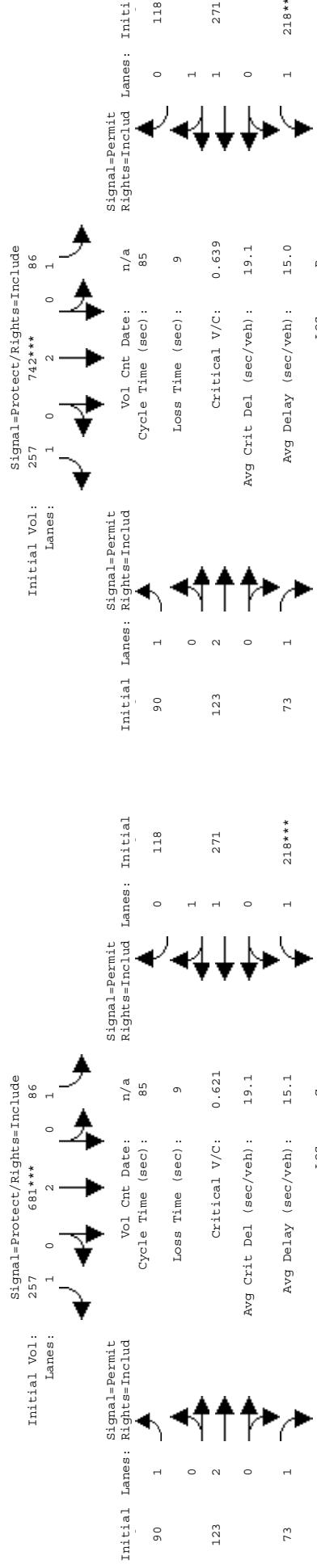
Capacity Analysis Module:
Vol/Sat: 0.16 0.22 0.04 0.04 0.13 0.15 0.07 0.02 0.04 0.05 0.07 0.07
Crit Moves: ***
Green Time: 31.6 54.4 54.4 7.0 29.8 29.8 14.6 14.6 14.6 14.6 14.6 14.6
Volume/Cap: 0.42 0.35 0.07 0.49 0.38 0.42 0.38 0.41 0.21 0.27 0.42 0.42
Delay/Veh: 15.4 5.4 4.4 30.5 15.8 16.3 24.3 22.7 23.0 23.4 24.2 24.2
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
ProgAdj/Fctr: 1.00 0.0 0.85 1.00 0.85 0.85 1.00 0.85 0.85 1.00 0.85 1.00 0.85
AdjSel/Veh: 15.4 4.6 3.7 30.5 13.4 13.8 24.3 19.3 19.6 23.4 20.5 20.5

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 2

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 2

Intersection #8: Whisman/Middlefield

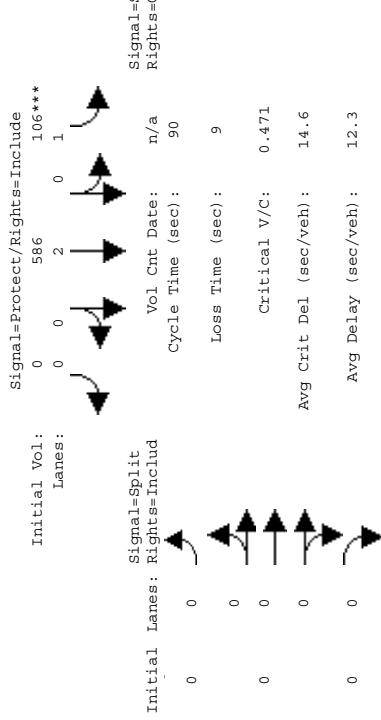


Approach:	North Bound	South Bound	East Bound	West Bound	Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	7 10 10	7 10 10	10 10 10	10 10 10	Min. Green:	7 10 10	7 10 10	10 10 10	10 10 10
Volume Module:					Volume Module:				
Base Vol:	259	845	63	67	Base Vol:	259	845	63	67
Growth Adj:	1.17	1.17	1.17	1.17	Growth Adj:	1.17	1.17	1.17	1.17
Initial Bee:	304	991	74	79	Initial Bee:	304	991	74	79
Added Vol:	0	4	0	0	Added Vol:	0	55	0	0
Approved Pr:	201	30	7	62	Approved Pr:	41	201	7	62
Initial Fut:	345	1196	104	86	Initial Fut:	345	1247	104	86
User Adj:	1.00	1.00	1.00	1.00	User Adj:	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	PHF Adj:	1.00	1.00	1.00	1.00
PHF Volume:	345	1196	104	86	PHF Volume:	345	1247	104	86
Reducit Vol:	0	0	0	0	Reducit Vol:	0	0	0	0
Reduced Vol:	345	1196	104	86	Reduced Vol:	345	1247	104	86
PCE Adj:	1.00	1.00	1.00	1.00	PCE Adj:	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	MLF Adj:	1.00	1.00	1.00	1.00
Final Vol.:	345	1196	104	86	Final Vol.:	345	1247	104	86
Saturation Flow Module:					Saturation Flow Module:				
Vol/Lane:	1800	1800	1800	1800	Vol/Lane:	1800	1800	1800	1800
Adjustment:	0.92	1.06	0.83	0.92	Adjustment:	0.92	1.06	0.83	0.92
Lanes:	1.00	2.00	1.00	2.00	Lanes:	1.00	2.00	1.00	2.00
Final Sat.:	1662	3800	1487	1662	Final Sat.:	1662	3800	1487	1662
Capacity Analysis Module:					Capacity Analysis Module:				
Vol/Sat:	0.21	0.31	0.07	0.05	Vol/Sat:	0.21	0.33	0.07	0.05
Crit Moves:	****	****	0.17	0.09	Crit Moves:	****	****	0.17	0.09
Green Time:	28.4	46.0	7.0	24.5	Green Time:	27.6	46.6	46.6	26.0
Volume/Cap:	0.62	0.58	0.13	0.63	Volume/Cap:	0.64	0.60	0.13	0.63
Delay/Veh:	19.6	10.3	7.3	34.7	Delay/Veh:	20.4	10.2	7.1	34.7
ProgAdjFcrt:	1.00	1.00	1.00	1.00	ProgAdjFcrt:	1.00	1.00	1.00	1.00
AddDel/Veh:	19.6	8.7	6.2	34.7	AddDel/Veh:	20.4	8.6	6.0	34.7
DesgnQueue:	11	28	2	4	DesgnQueue:	12	29	2	4

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM Peak

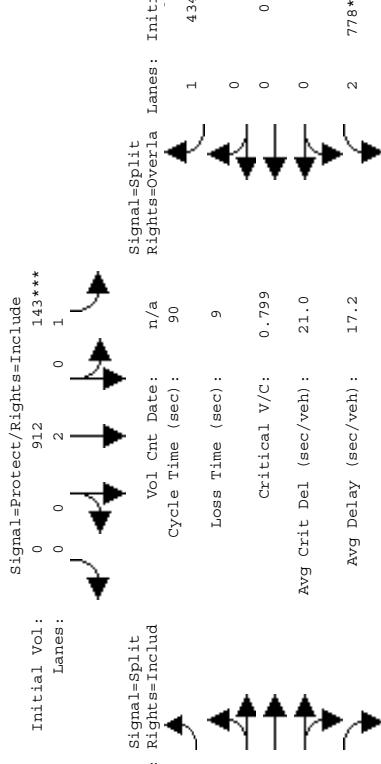
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

Intersection #9: Ellis/Middlefield



Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	0.10	0.10	0.10	0.10
Volume Module:				
Base Vol:	0	783	154	106
Growth Adj:	1.00	1.00	1.00	1.00
Initial Bee:	0	783	154	106
Added Vol:	0	0	0	0
PassInitial Fut:	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00
PHF Volume:	0	783	154	106
Reducit Vol:	0	0	0	0
Reduced Vol:	0	783	154	106
PCE Adj:	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00
Final Vol.:	0	783	154	106
Saturation Flow Module:				
Sat/Lane:	1800	1800	1800	1800
Adjustment:	0.97	1.03	1.00	0.97
Lanes:	0.00	1.66	0.34	1.00
Final Sat.:	0	3091	608	1750
Capacity Analysis Module:				
Vol/Sat:	0.00	0.25	0.25	0.25
Crit Moves:	*****	*****	*****	*****
Green Time:	0.0	48.4	11.6	60.0
Volume/Cap:	0.00	0.47	0.33	0.47
Delay/Veh:	0.0	9.9	2.4	28.8
ProgAdjFcrt:	1.00	1.00	1.00	1.00
AddDel/Veh:	0.0	9.9	2.4	28.8
Designdqueue:	0	19	2	5

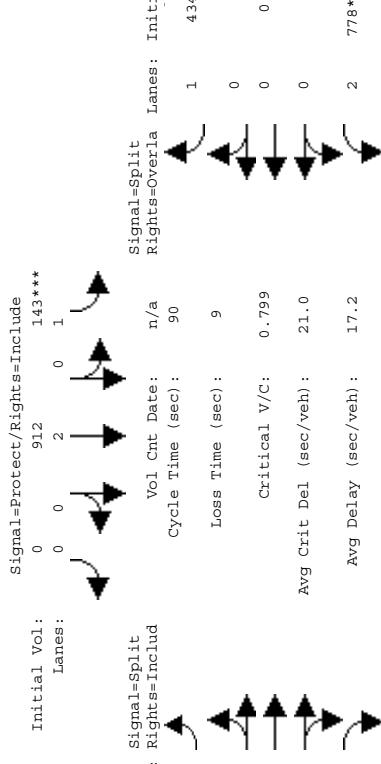
Intersection #9: Ellis/Middlefield



Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	0	10	7	10
Volume Module:				
Base Vol:	0	783	154	106
Growth Adj:	1.00	1.00	1.00	1.00
Initial Bee:	0	783	154	106
Added Vol:	0	0	0	0
PassInitial Fut:	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00
PHF Volume:	0	783	154	106
Reducit Vol:	0	0	0	0
Reduced Vol:	0	783	154	106
PCE Adj:	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00
Final Vol.:	0	783	154	106
Saturation Flow Module:				
Sat/Lane:	1800	1800	1800	1800
Adjustment:	0.97	1.04	1.00	0.97
Lanes:	0.00	1.66	0.34	1.00
Final Sat.:	0	3091	608	1750
Capacity Analysis Module:				
Vol/Sat:	0.00	0.25	0.25	0.25
Crit Moves:	*****	*****	*****	*****
Green Time:	0.0	44.0	9.4	53.2
Volume/Cap:	0.00	0.80	0.49	0.80
Delay/Veh:	0.0	16.5	2.4	44.8
ProgAdjFcrt:	1.00	1.00	1.00	1.00
AddDel/Veh:	0.0	16.5	2.4	44.8
Designdqueue:	0	32	4	7

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

Intersection #9: Ellis/Middlefield



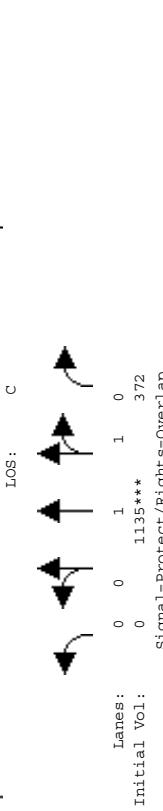
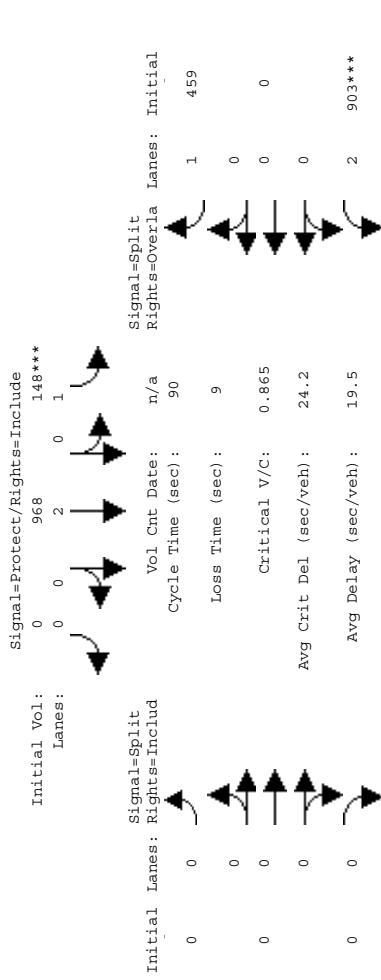
Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	0	10	10	10
Volume Module:				
Base Vol:	0	783	154	106
Growth Adj:	1.00	1.00	1.00	1.00
Initial Bee:	0	783	154	106
Added Vol:	0	0	0	0
Approved Pr:	0	0	0	0
Initial Fut:	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00
PHF Volume:	0	1109	336	143
Reducit Vol:	0	0	0	0
Reduced Vol:	0	1109	336	143
PCE Adj:	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00
Final Vol.:	0	1109	336	143
Saturation Flow Module:				
Sat/Lane:	1800	1800	1800	1800
Adjustment:	0.97	1.04	1.00	0.97
Lanes:	0.00	1.52	0.48	0.00
Final Sat.:	0	2839	860	1750
Capacity Analysis Module:				
Vol/Sat:	0.00	0.39	0.39	0.24
Crit Moves:	*****	*****	*****	*****
Green Time:	0.0	44.0	9.2	53.2
Volume/Cap:	0.00	0.80	0.49	0.80
Delay/Veh:	0.0	16.5	2.4	44.8
ProgAdjFcrt:	1.00	1.00	1.00	1.00
AddDel/Veh:	0.0	16.5	2.4	44.8
Designdqueue:	0	32	4	7

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 2

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM Peak

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)

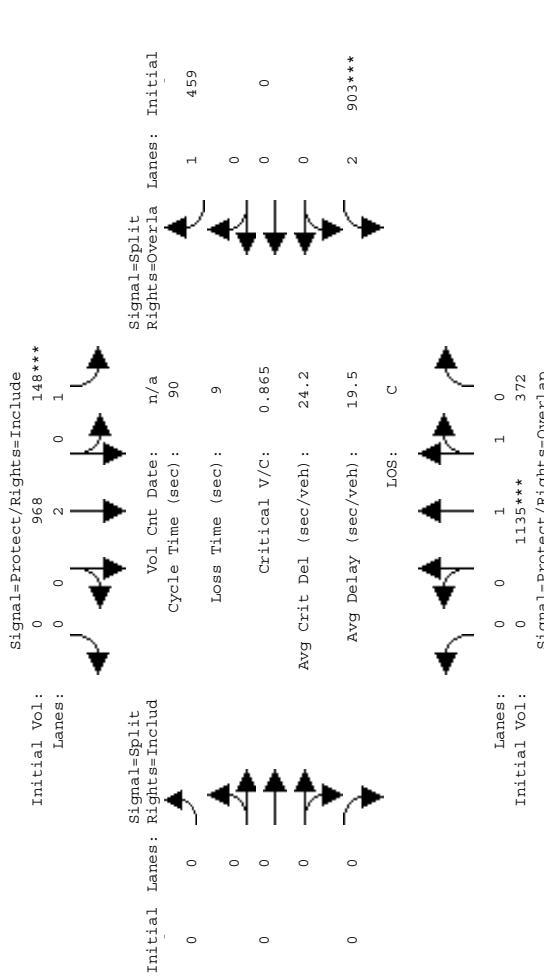
Intersection #9: Ellis/Middlefield



Signal=Protect/Rights=Overlap

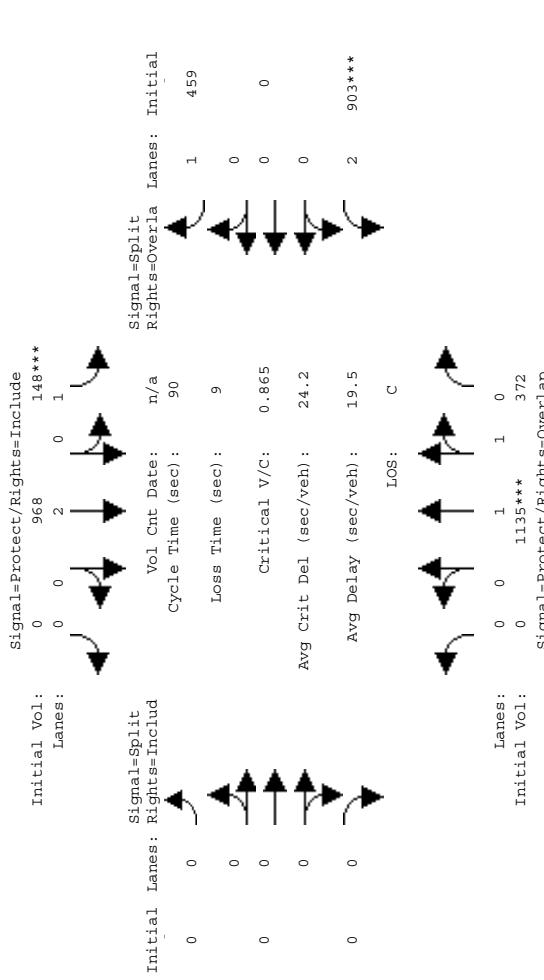
Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	0 10 10	7 10 0	0 0 0	7 0 10
Volume Module:	0 783 154	106 586	0 0 0	346 0 296
Base Vol:	1.17 1.17	1.17 1.17 1.17	1.17 1.17 1.17	1.17 1.17 1.17
Growth Adj:	1.17 1.17	1.17 1.17 1.17	1.17 1.17 1.17	1.17 1.17 1.17
Initial Bee:	0.918 1.81	1.24 687	0 0 0	406 0 347
Added Vol:	0 30 48	5 81	0 0 0	208 0 25
Approved Pr:	0 187 143	19 200	0 0 0	289 0 87
Initial Fut:	0 1135 372	148 968	0 0 0	903 0 459
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Volume:	0 1135 372	148 968	0 0 0	903 0 459
Reduc Vol:	0 0 0	0 0 0	0 0 0	0 0 0
Reduced Vol:	0 1135 372	148 968	0 0 0	903 0 459
PCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
MLF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Vol.:	0 1135 372	148 968	0 0 0	903 0 459
Saturation Flow Module:	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800
Adj/Lane:	0.971 0.04 1.00	0.97 1.06 0.97	0.88 1.06 0.97	0.97 1.06 0.97
Lanes:	0.00 1.49 0.51	1.00 2.00 0.00	0.00 0.00 0.00	1.00 2.00 0.00
Final Sat.:	0 2786 913	1750 3800	0 0 0	3150 0 1750
Capacity Analysis Module:	0.00 0.41 0.41	0.08 0.25 0.00	0.00 0.00 0.00	0.29 0.00 0.26
Vol/Sat:	****	****	****	****
Crit Moves:	8.8 51.2	0.0 0.0	0.0 0.0	29.8 0.0
Green Time:	0.0 42.4	72.2	0.0 0.0	38.6
Volume/Cap:	0.00 0.87	0.51 0.45	0.00 0.00	0.87 0.00
Delay/Veh:	0.0 19.6	2.4 53.7	8.6 0.0	0.0 16.2
ProgAdjFctr:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
AddJel/Veh:	0.0 19.6	2.4 53.7	8.6 0.0	0.0 16.2
DesignQueue:	0 34	4 7	22 0	0 14

Intersection #10: Ellis/101 SB Ramps



Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	0 0 0 0	0 10 10 0	0 10 10 0	0 10 10 0
Volume Module:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
Base Vol:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Growth Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Bee:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
Added Vol:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
Approved Pr:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
Initial Fut:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Volume:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
Reduc Vol:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
Reduced Vol:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
PCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
MLF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Vol.:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
Saturation Flow Module:	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800
Adj/Lane:	0.97 1.00 1.00	0.97 1.00 1.00	0.97 1.00 1.00	0.97 1.00 1.00
Lanes:	0.00 0.00	0.00 0.00	0.99 0.01	1.00 0.00
Final Sat.:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
Capacity Analysis Module:	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00
Vol/Sat:	0.10 0.10	0.07 0.07	0.00 0.08	0.13 0.20
Crit Moves:	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00
Green Time:	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
Volume/Cap:	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00
Delay/Veh:	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
ProgAdjFctr:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
AddJel/Veh:	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
DesignQueue:	0 0	0 0	0 0	0 0

Intersection #10: Ellis/101 SB Ramps



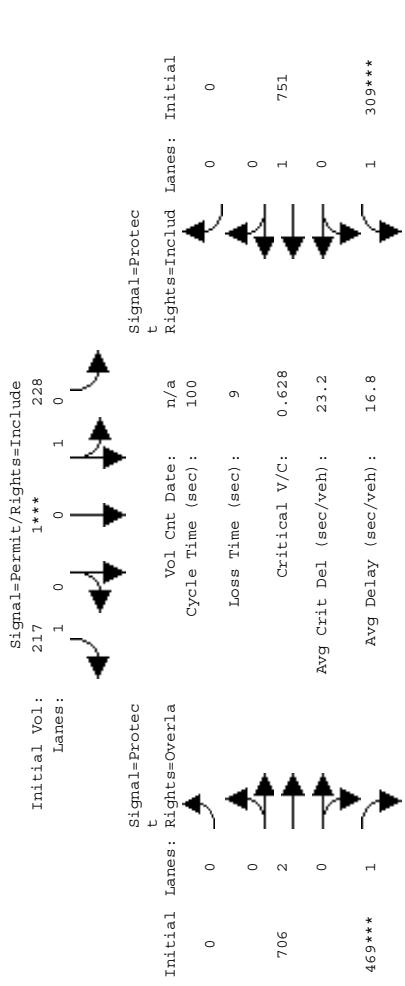
Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	0 0 0 0	0 10 10 0	0 10 10 0	0 10 10 0
Volume Module:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
Base Vol:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Growth Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Bee:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
Added Vol:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
Approved Pr:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
Initial Fut:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Volume:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
Reduc Vol:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
Reduced Vol:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
PCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
MLF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Vol.:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
Saturation Flow Module:	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800
Adj/Lane:	0.97 1.00 1.00	0.97 1.00 1.00	0.97 1.00 1.00	0.97 1.00 1.00
Lanes:	0.00 0.00	0.00 0.00	0.99 0.01	1.00 0.00
Final Sat.:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
Capacity Analysis Module:	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00
Vol/Sat:	0.10 0.10	0.07 0.07	0.00 0.08	0.13 0.20
Crit Moves:	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00
Green Time:	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
Volume/Cap:	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00
Delay/Veh:	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
ProgAdjFctr:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
AddJel/Veh:	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
DesignQueue:	0 0	0 0	0 0	0 0

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 2

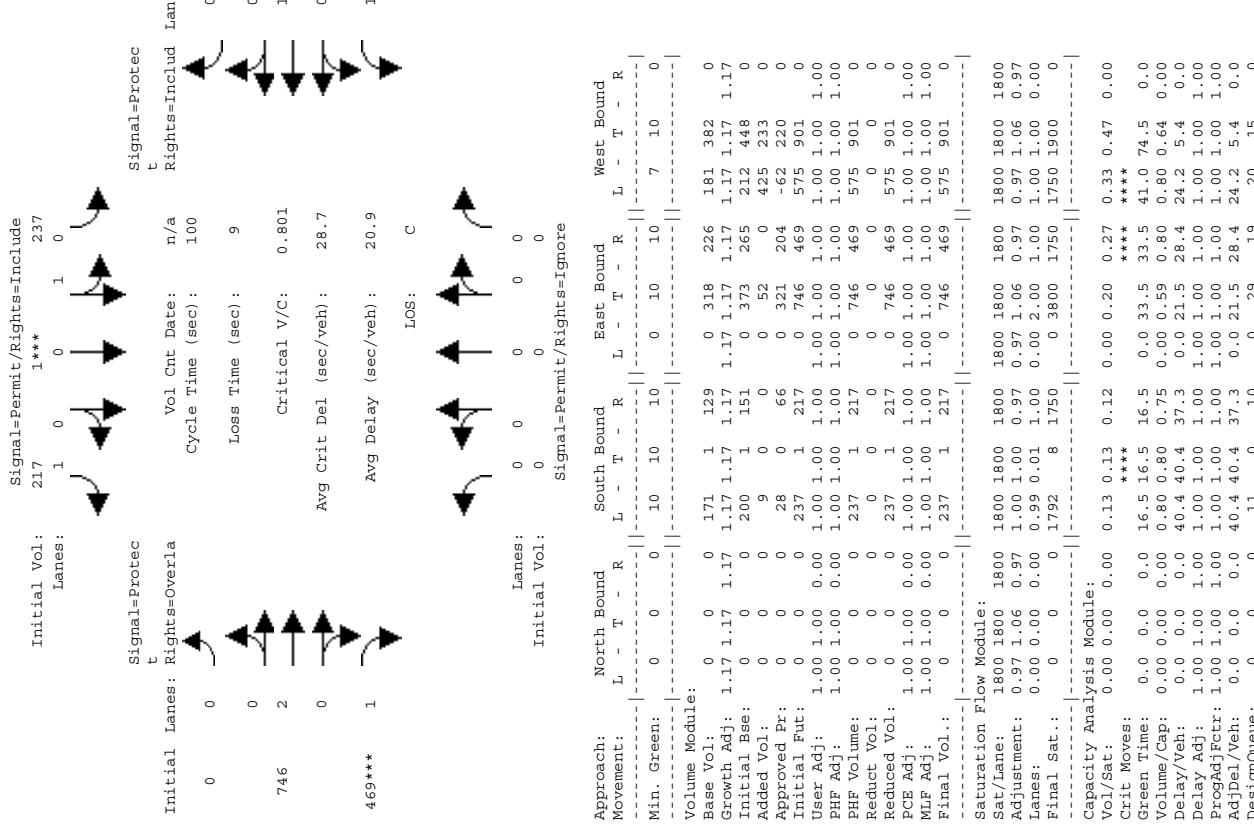
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 2

Intersection #10: Ellis/101 SB Ramps



Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	0 0 0 0	10 10 10 10	0 10 10 10	7 10 0 0
Volume Module:				
Base Vol:	0 0 0 0	171 171 171 171	129 0 318 226	181 382 0 0
Growth Adj:	1.17 1.17 1.17 1.17	1.17 1.17 1.17 1.17	1.17 1.17 1.17 1.17	1.17 1.17 1.17 1.17
Initial Bee:	0 0 0 0	200 1 151 0	373 0 265 212	448 0 448 0
Added Vol:	0 0 0 0	0 0 0 0	159 83 0 0	0 0 0 0
Approved Pr:	0 0 0 0	28 0 66 0	321 204 62 220	0 0 0 0
Initial Fut:	0 0 0 0	228 1 217 0	706 469 309 751	0 0 0 0
User Adj:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
PHF Adj:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
PHF Volume:	0 0 0 0	228 1 217 0	706 469 309 751	0 0 0 0
Reduced Vol:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
PCE Adj:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
MLF Adj:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
Final Vol.:	0 0 0 0	228 1 217 0	706 469 309 751	0 0 0 0
Saturation Flow Module:				
Sat/Lane:	1800 1800 1800 1800	1800 1800 1800 1800	1800 1800 1800 1800	1800 1800 1800 1800
Adjustment:	0.971 0.97 1.00 1.00	0.97 1.00 0.97 1.00	0.97 1.00 0.97 1.00	0.97 1.00 0.97 1.00
Lanes:	0.00 0.00 0.00 0.00	0.99 0.01 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
Final Sat.:	0 0 0 0	1792 8 1750	0 3800 1750 1900	0 0 0 0
Capacity Analysis Module:				
Vol/Sat:	0.00 0.00 0.00 0.13	0.12 0.00 0.19	0.27 0.18 0.40	0.00 0.00 0.00 0.00
Crit Moves:	*****	*****	*****	*****
Green Time:	0.0 0.0 0.0 0.0	20.2 20.2 20.2	42.7 42.7 42.7	28.1 70.8 0.0
Volume/Cap:	0.00 0.00 0.00 0.00	0.63 0.63 0.63 0.61	0.63 0.63 0.63 0.63	0.63 0.56 0.00 0.00
Delay/Veh:	0.0 0.0 0.0 0.0	30.1 30.1 30.1 29.8	1.0 1.0 1.0 1.0	1.0 1.0 1.0 1.0
Delay Adj:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
ProgAdjFcrr:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
AddJl/Veh:	0.0 0.0 0.0 0.0	30.1 30.1 30.1 29.8	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0
DesignQueue:	0 0 0 0	10 10 10 10	16 16 16 16	14 14 14 14

Intersection #10: Ellis/101 SB Ramps



Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 2

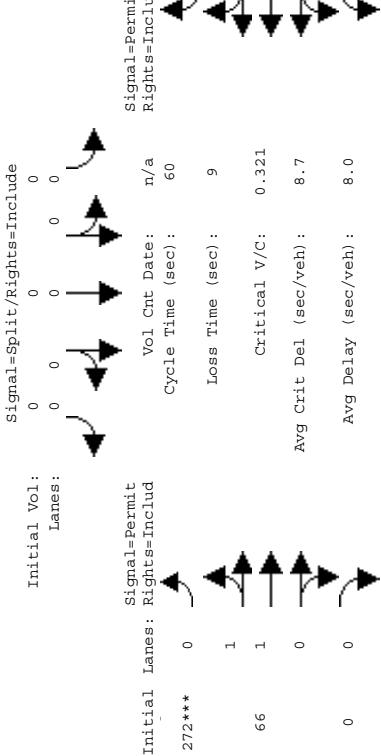
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 2

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 2

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 2

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM Peak

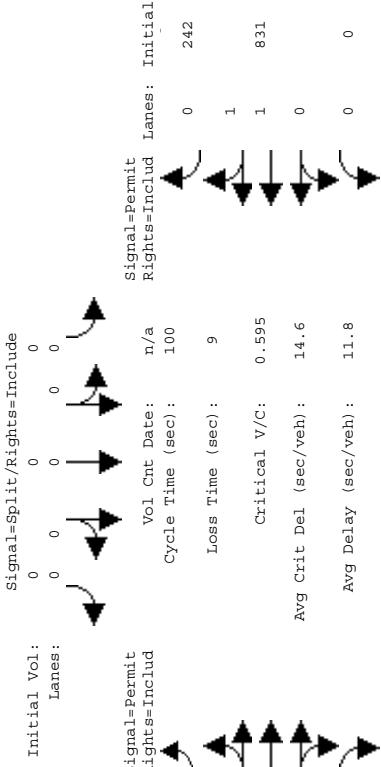
Level Of Service Computation Report
85 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1



Lanes: 1 0 0 0 1
Initial Vol: 212*** 18 58
Signal=Split/Rights=Include

Level Of Service Computation Report
85 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

Level Of Service Computation Report
85 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

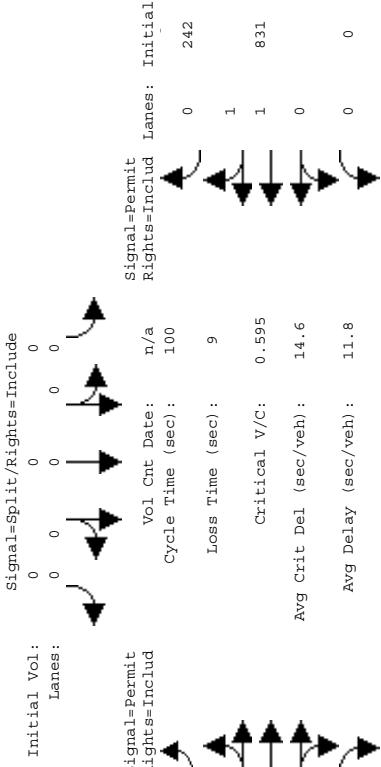


Lanes : 1 0 0 0 1
Initial Vol : 336*** 21 35
Signal=Split/Rights=Include

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T	- R	L - T	- R	L - T	- R	L - T	- R	L - T	- R	L - T	- R
Min. Green:	10	10	10	0	0	0	10	10	0	0	10	10
Volume Module:												
Base Vol.:	212	18	58	0	0	0	272	66	0	355	170	
Growth Adj.:	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	
Initial Bse.:	249	21	68	0	0	0	319	77	0	416	199	
Added Vol.:	0	24	0	0	0	0	0	12	0	243	0	
Approved Pr.:	87	0	-57	0	0	0	302	45	0	0	172	43
Initial Fut.:	336	21	35	0	0	0	621	134	0	831	242	
User Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHF Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHF Volume:	336	21	35	0	0	0	621	134	0	831	242	
Reduced Vol.:	336	21	35	0	0	0	621	134	0	831	242	
PCE Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
MLF Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Final Vol.:	336	21	35	0	0	0	621	134	0	831	242	
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	
Adj/Adjustment:	1.00	1.00	1.00	0.97	1.06	0.97	1.06	0.97	1.06	0.97	1.04	1.00
Lanes:	1.00	1.00	1.00	0.97	1.06	0.97	1.06	0.97	1.06	0.97	1.04	1.00
Final Sat.:	1800	675	1125	0	0	0	1750	1900	0	2865	834	
Capacity Analysis Module:												
Vol/Sat:	0.19	0.03	0.03	0.00	0.00	0.00	0.35	0.07	0.00	0.00	0.29	0.29
Crit Moves:	***						****					
Green Time:	31.4	31.4	31.4	0.0	0.0	0.0	59.6	59.6	0.0	0.0	59.6	59.6
Volume/Cap:	0.60	0.10	0.10	0.00	0.00	0.00	0.60	0.12	0.00	0.00	0.49	0.49
Delay Yeh.:	23.1	18.5	18.5	0.0	0.0	0.0	10.2	6.7	0.0	0.0	8.9	8.9
Delay Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdj/Fctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj/Def/Veh.:	23.1	18.5	18.5	0.0	0.0	0.0	10.2	6.7	0.0	0.0	8.9	8.9
Desn/Module:	13	1	1	0	0	0	15	3	0	0	20	6

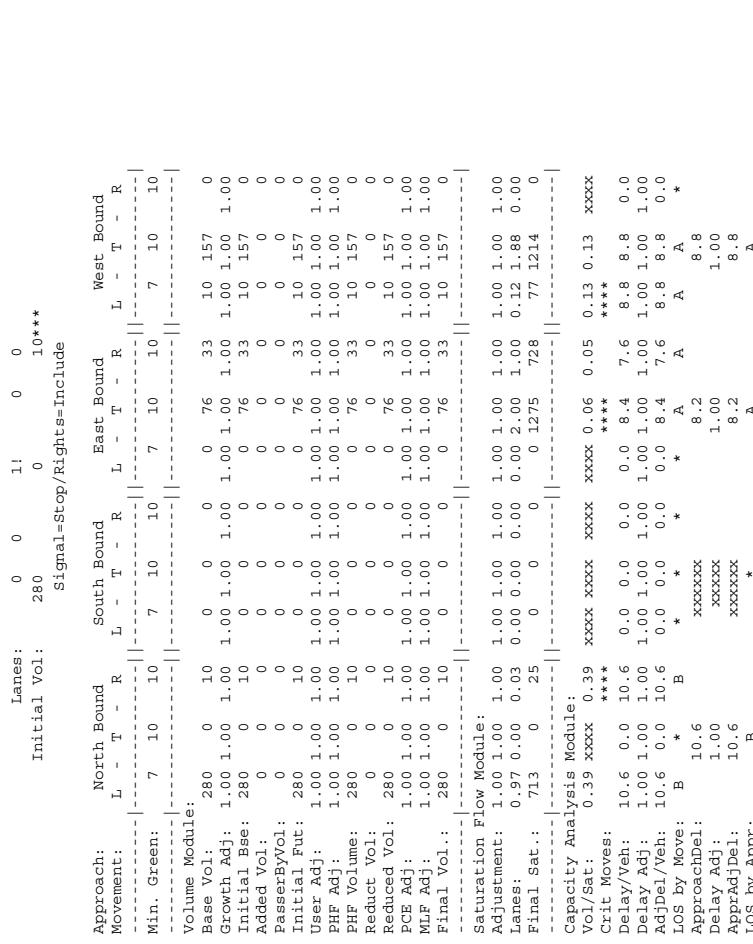
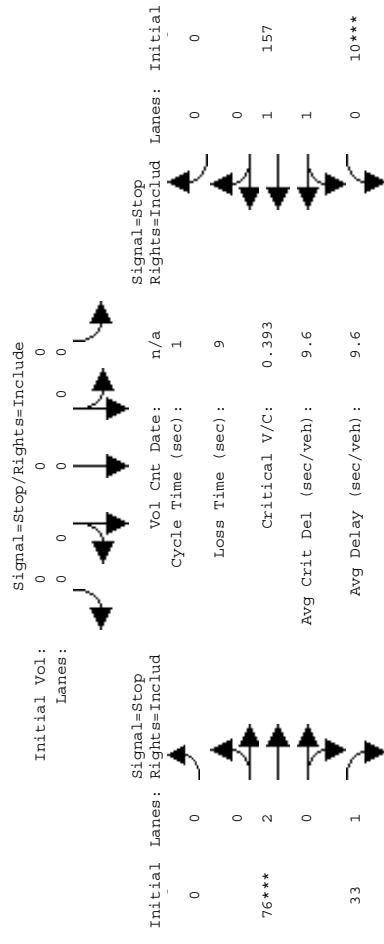
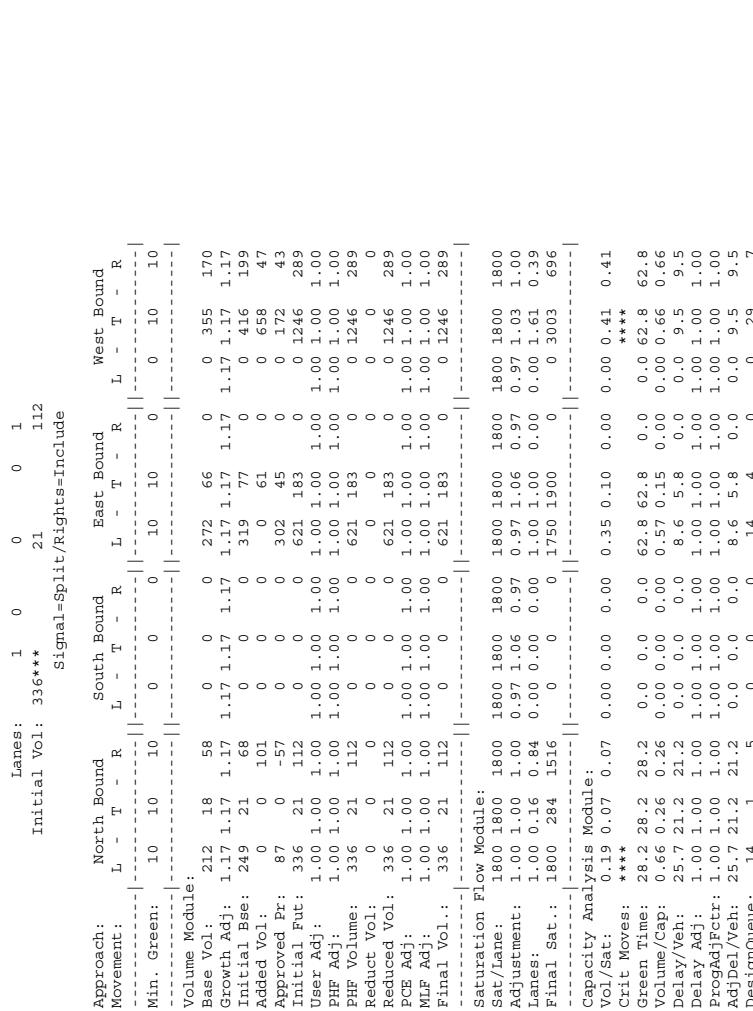
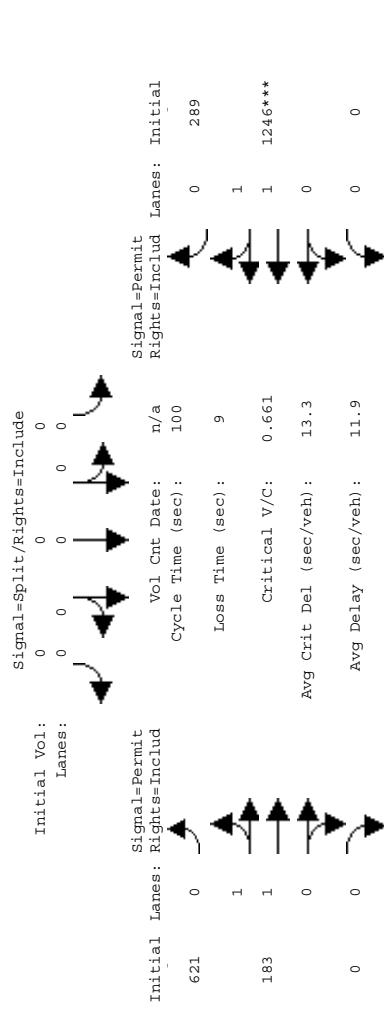
Level Of Service Computation Report
85 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

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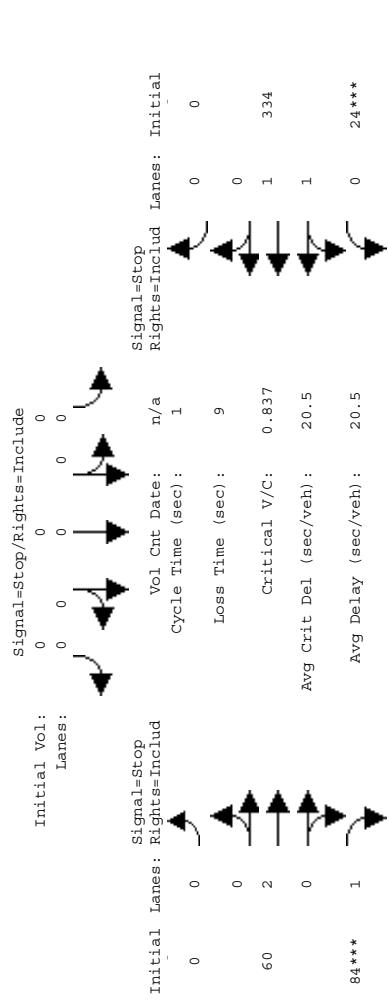
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 2

Intersection #11: Ellis/101 NB Ramps
Intersection #12: Ellis/Manila
Level Of Service Computation Report
1997 HCM 4-Way Stop (Future Volume Alternative)

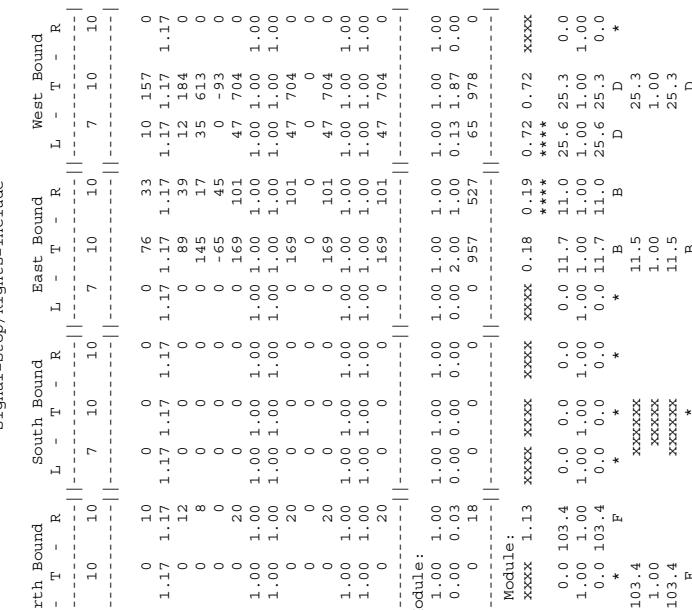
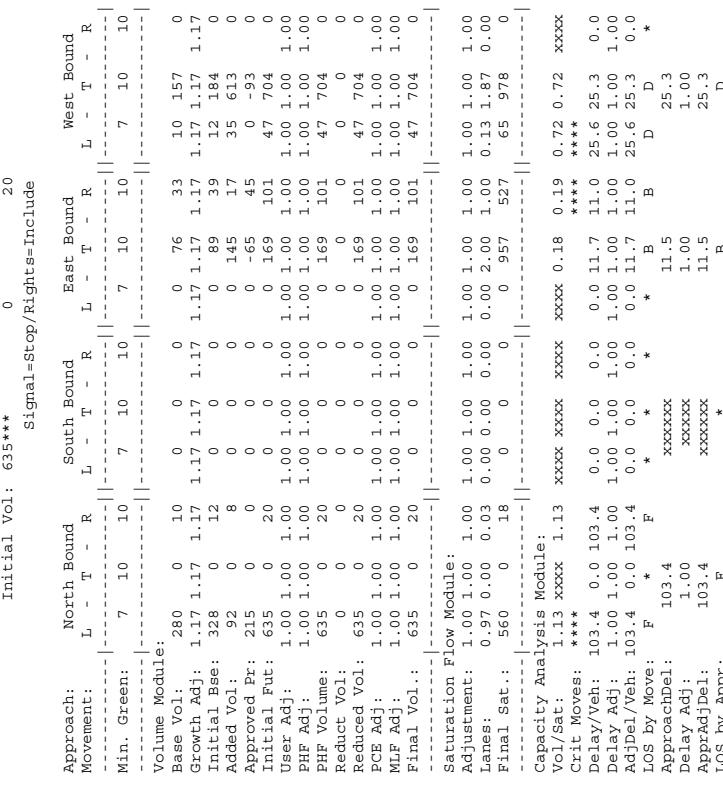


Level Of Service Computation Report
1997 HCM 4-Way Stop (Future Volume Alternative)
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Level Of Service Computation Report
1997 HCM 4-Way Stop (Future Volume Alternative)
PM 2013 Project Alt. 2



Initial Vol: 543***
Lanes: 0 0 11 0 0 14
Initial Vol: 543***
Lanes: 0 0 11 0 0 14
Initial Vol: 543***
Lanes: 0 0 11 0 0 14
Initial Vol: 543***
Lanes: 0 0 11 0 0 14



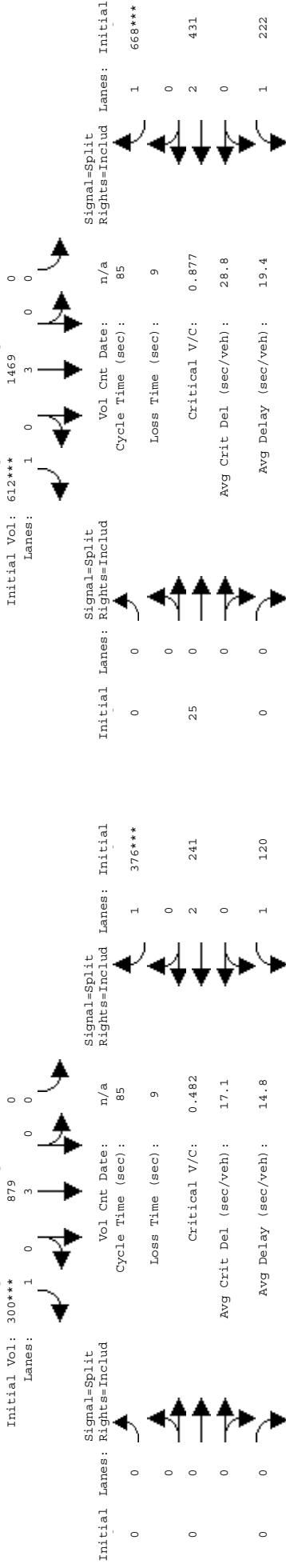
Intersection #12: Ellis/Manila
Level Of Service Computation Report
1997 HCM 4-Way Stop (Future Volume Alternative)
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Intersection #12: Ellis/Manila
Level Of Service Computation Report
1997 HCM 4-Way Stop (Future Volume Alternative)
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Intersection #13: 237 WB Ramps/Middlefield

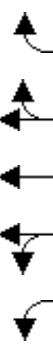
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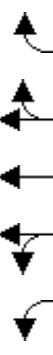
Initial Vol: 141***
Lanes: 0 0 0 0
Signal=Protect/Rights=Include



Initial Vol: 141***
Lanes: 2 0 2 0
Signal=Protect/Rights=Include



Initial Vol: 165***
Lanes: 2 0 2 0
Signal=Protect/Rights=Include

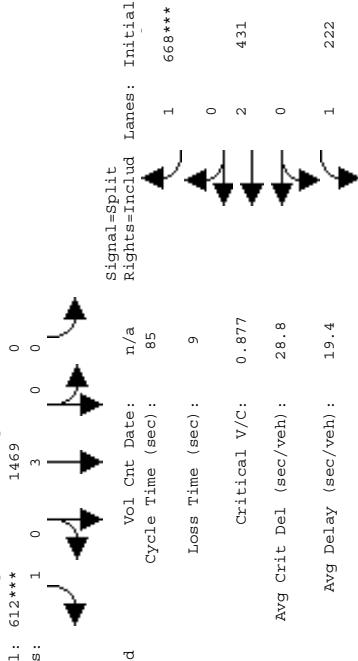


Approach:	North Bound	South Bound	East Bound	West Bound	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	7 10	0 0	10 0	0 0	0 10	0 0	10 0	0 0
Volume Module:								
Base Vol:	141	321	0	0	879	300	0	120
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bce:	141	321	0	0	879	300	0	120
Added Vol:	0	0	0	0	0	0	0	0
Approved Pr:	0	0	0	0	0	0	0	0
Initial Fct:	141	321	0	0	879	300	0	120
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	141	321	0	0	879	300	0	120
Reducit Vol:	0	0	0	0	0	0	0	0
Reduced Vol:	141	321	0	0	879	300	0	120
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	141	321	0	0	879	300	0	120
Saturation Flow Module:								
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	1.06	0.97	1.06	0.97	1.06
Lanes:	2.00	2.00	0.00	0.00	3.00	1.00	2.00	1.00
Final Sat.:	3150	3800	0	0	5700	1750	0	1750
Capacity Analysis Module:								
Vol/Sat:	0.04	0.08	0.00	0.00	0.15	0.17	0.00	0.06
Crit Moves:	*****							
Green Time:	7.9	38.1	0.0	0.0	30.2	30.0	0.0	37.9
Volume/Cap:	0.48	0.19	0.00	0.00	0.43	0.48	0.00	0.14
Delay/Veh:	28.8	10.7	0	0	16.0	16.7	0	10.7
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AddDel/Veh:	28.8	10.7	0	0	16.0	16.7	0	10.7
DesInqueue:	6	9	0	0	28	10	0	3

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Intersection #13: 237 WB Ramps/Middlefield

Signal=Protect/Rights=Include



Initial Vol: 165***
Lanes: 2 0 2 0
Signal=Protect/Rights=Include

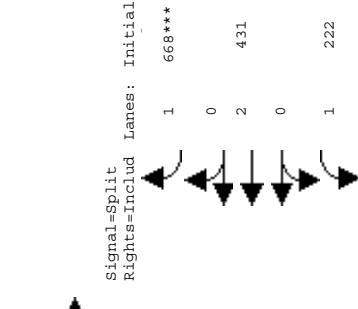


Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	7 10	0 0	10 0	0 0
Volume Module:				
Base Vol:	141	321	0	0
Growth Adj:	1.17	1.17	1.17	1.17
Initial Bce:	165	376	0	0
Added Vol:	0	16	0	0
Approved Pr:	0	132	0	0
Initial Fct:	165	524	0	0
User Adj:	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00
PHF Volume:	165	524	0	0
Reducit Vol:	0	0	0	0
Reduced Vol:	165	524	0	0
PCE Adj:	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00
Final Vol.:	165	524	0	0
Saturation Flow Module:				
Sat/Lane:	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	1.06
Lanes:	2.00	2.00	0.00	0.00
Final Sat.:	3150	3800	0	0
Capacity Analysis Module:				
Vol/Sat:	0.05	0.14	0.00	0.00
Crit Moves:	*****			
Green Time:	7.0	40.0	0	0
Volume/Cap:	0.64	0.29	0.00	0.00
Delay/Veh:	32.2	10.5	0	0
Delay Adj:	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00
AddDel/Veh:	32.2	10.5	0	0
DesInqueue:	7	14	0	0

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Intersection #13: 237 WB Ramps/Middlefield

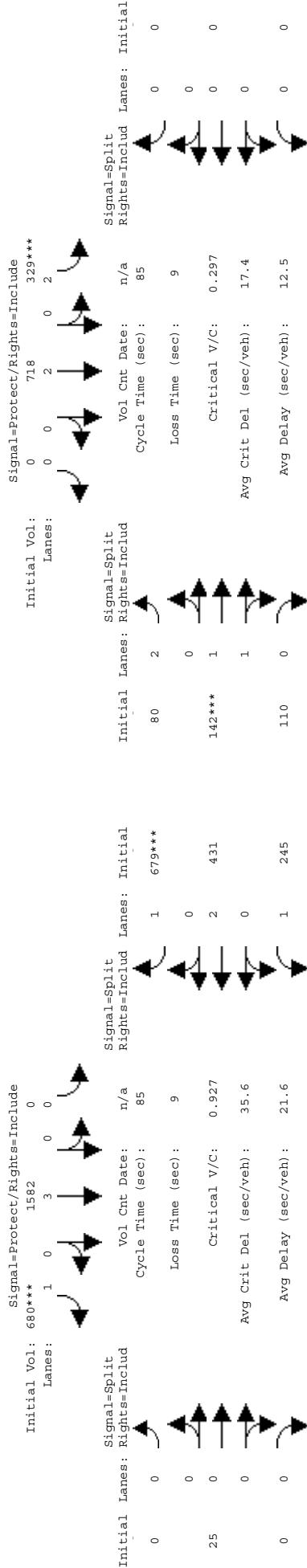
Signal=Protect/Rights=Include



Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	7 10	0 0	10 0	0 0
Volume Module:				
Base Vol:	141	321	0	0
Growth Adj:	1.17	1.17	1.17	1.17
Initial Bce:	165	376	0	0
Added Vol:	0	16	0	0
Approved Pr:	0	132	0	0
Initial Fct:	165	524	0	0
User Adj:	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00
PHF Volume:	165	524	0	0
Reducit Vol:	0	0	0	0
Reduced Vol:	165	524	0	0
PCE Adj:	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00
Final Vol.:	165	524	0	0
Saturation Flow Module:				
Sat/Lane:	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	1.06
Lanes:	2	0	0	0
Final Sat.:	3150	3800	0	0
Capacity Analysis Module:				
Vol/Sat:	0.05	0.14	0.00	0.00
Crit Moves:	*****			
Green Time:	7.0	40.0	0	0
Volume/Cap:	0.64	0.29	0.00	0.00
Delay/Veh:	32.2	10.5	0	0
Delay Adj:	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00
AddDel/Veh:	32.2	10.5	0	0
DesInqueue:	7	14	0	0

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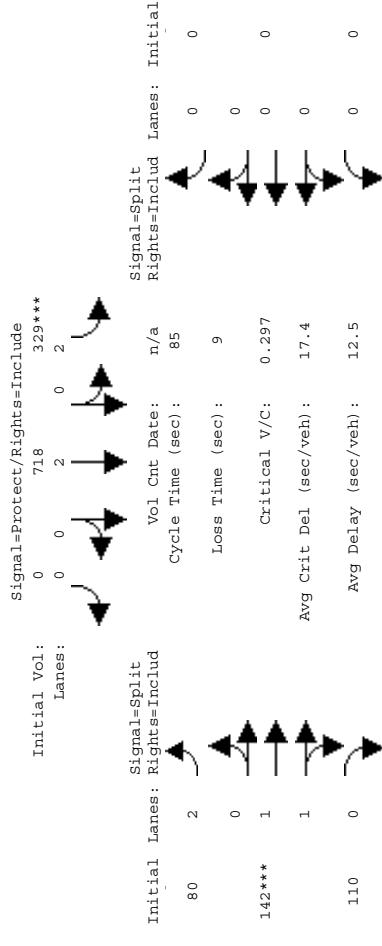
Lanes: 2
Initial Vol: 165***
Signal=Protect/Rights=Include

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Win. Green:	7 10	0 10	0 0	0 10 10
Volume Module:				
Base Vol.:	141 321	0 879	300 0	0 0
Growth Adj.:	1.17 1.17	1.17 1.17	1.17 1.17	1.17 1.17
Initial Bse.:	165 376	0 1030	352 0	0 0
Added Vol.:	0 67	0 171	118 0	0 0
Approved Pr.:	0 132	0 381	210 0	25 0
Initial Fut.:	165 575	0 1582	680 0	25 0
User Adj.:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
HF/HF Adj.:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
HF Volume:	165 575	0 1582	680 0	25 0
Reduced Vol.:	0 0	0 0	0 0	0 0
Reduced Vol.:	165 575	0 1582	680 0	25 0
CEC Adj.:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
MLF Adj.:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
Final Vol.:	165 575	0 1582	680 0	25 0

	Capacity	Analysis	Module	
Initial Sat:	0.05	0.15	0.00	0.00 0.28
Final Sat:	0.05	0.15	0.00	0.39 0.00 xxxx
Unit	*****	*****	*****	*****
Unit Moves:	7.0	41.5	0.0	0.0 34.5
Green Time:	0.64	0.31	0.00	0.00 0.68
Volume/Cap:	32.2	10.0	0.0	0.0 0.16.4
Delay/Yeh:	1.00	1.00	1.00	1.00 1.00
Delay adj:	1.00	1.00	1.00	1.00 1.00
Progadj/cctr:	32.2	10.0	0.0	0.0 0.16.4
DjDj/DjJ:	7	14	0.0	0.0 0.48
Final ionmove:	7	14	0.0	0.0 0.21

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1985 HCM Operat

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Lanes: 2 0 2 0 0
 Initial Vol: 165*** 575
 Signal=Protect,Rights=Include

Approach:	North Bound			South Bound			East Bound			West Bound		
	L - T	R	L - T	R	L - T	R	L - T	R	L - T	R	L - T	R
Movement:	-	-	-	-	-	-	-	-	-	-	-	-
Min. Green:	0	10	10	7	10	0	7	10	0	0	0	0
Volume Module:	-	-	-	-	-	-	-	-	-	-	-	-
Base Vol:	0	431	162	329	718	0	80	142	110	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	431	162	329	718	0	80	142	110	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	431	162	329	718	0	80	142	110	0	0	0
User Adj:	-1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	431	162	329	718	0	80	142	110	0	0	0
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLP Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	431	162	329	718	0	80	142	110	0	0	0

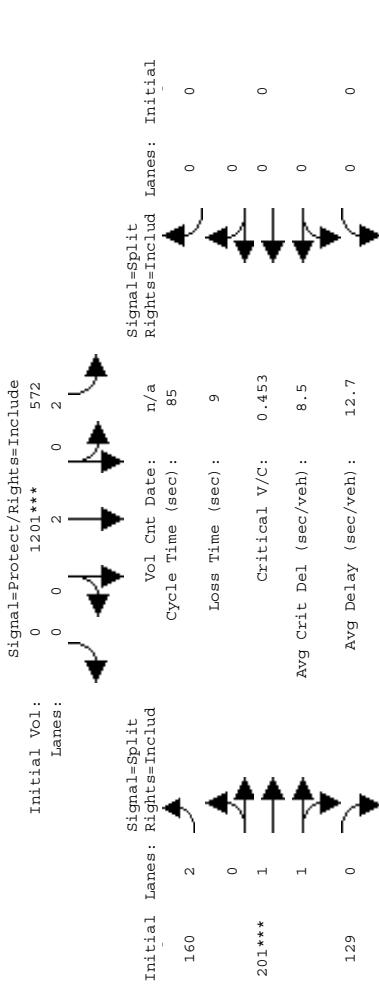
Capacity Analysis Module:									
Vol./Sat:	0.0	0.06	0.09	0.10	0.19	0.00	0.03	0.07	0.00
Crit. Moves:			****	****			****		
Green Time:	0.0	26.5	26.5	29.9	56.5	0.0	19.5	19.5	0.0
Volume/Cap:	0.00	0.18	0.30	0.30	0.28	0.00	0.11	0.30	0.00
Delay/Veh:	0.0	16.2	16.2	16.9	15.2	4.5	0.0	19.7	20.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFcrt:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AddDelVeh:	0.0	16.2	16.9	15.2	4.5	0.0	19.7	20.6	0.0
DesimTime/veh:	0.0	14.5	14.5	10.0	12.5	3.0	5.4	0.0	0.0

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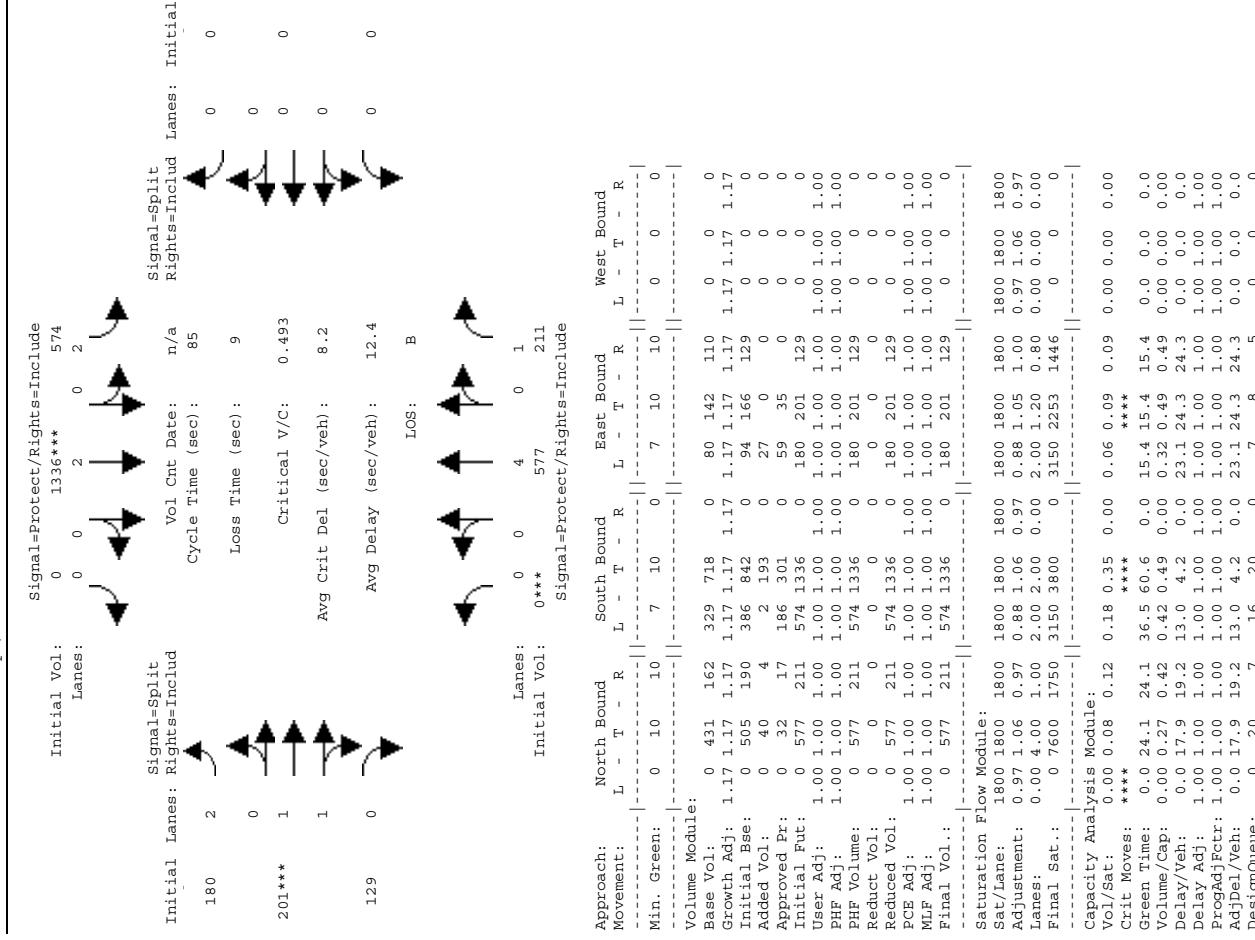
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Intersection #14: 237 EB Ramps/Middlefield



Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	0 10 10	7 10 0	7 10 0	0 0 0
Volume Module:				
Base Vol:	0 431	162	329 718	0 110
Growth Adj:	1.17 1.17	1.17 1.17	1.17 1.17 1.17 1.17	1.17 1.17 1.17 1.17
Initial Bce:	0 505	190	386 842	0 166
Added Vol:	0 9	0	58 0	0 0
Approved Pr:	0 32	17	186 301	0 59
Initial Fut:	0 546	207	572 1201	0 166
User Adj:	1.00 1.00	1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
PHF Adj:	1.00 1.00	1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
PHF Volume:	0 546	207	572 1201	0 166
Reducit Vol:	0 0	0	0 0	0 0
Reduced Vol:	0 546	207	572 1201	0 166
PCE Adj:	1.00 1.00	1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
MLF Adj:	1.00 1.00	1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
Final Vol.:	0 546	207	572 1201	0 166
Saturation Flow Module:				
Vol/Lane:	1800 1800	1800 1800	1800 1800	1800 1800
Adjustment:	0.97 1.06	0.97	0.88 1.05	1.00 0.97 1.06
Lanes:	0 0 4.00	1.00	2.00 2.00	0.80 0.00 0.00
Final Sat.:	0 7600	1750	3150 3800	0 3150 2253
Capacity Analysis Module:				
Vol/Sat:	0.00 0.07	0.12	0.18 0.32	0.00 0.05 0.09
Crit Moves:	*****			
Green Time:	0.0 23.4	35.9 59.3	0.0 16.7 16.7	0.0 0.0 0.0
Volume/Cap:	0.00 0.26	0.43	0.43 0.45	0.00 0.26 0.45
Delay/Veh:	0.0 18.3	19.7	12.3 44.4	0.0 22.0 23.2
ProgAdjFcrt:	1.00 1.00	1.00	1.00 1.00 1.00	1.00 1.00 1.00 1.00
AddDel/Veh:	0.0 18.3	19.7	13.3 44.4	0.0 22.0 23.2
Desgnqueue:	0 19	7	16 19	0 6 8 5 0 0



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Signal=Protect

Lanes:	Initial Vol:	Vol Cnt	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):
1	300***	0	n/a	9	0.274	8.3	7.5
0	0	0	60				
1	164	1	23				

Signal=Ignore

Lanes:	Initial Vol:	Vol Cnt	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):
1	300***	0	n/a	9	0.274	8.3	7.5
0	0	0	60				
1	63***	1	23				

Signal=Initial

Lanes:	Initial Vol:	Vol Cnt	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):
1	300***	0	n/a	9	0.274	8.3	7.5
0	0	0	60				
1	63***	1	23				

Vol/Sat:	1.00	0.00	0.00	0.09	0.00	0.18	0.02	0.01	0.00	0.00	0.03	0.00
Unitary Moves:						*****	*****	*****	*****	*****	*****	
Green Time:	0.0	0.0	0.0	0.0	0.0	34.0	0.0	0.0	0.0	0.0	0.0	0.0
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.31	0.21	0.05	0.00	0.00
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	4.7	0.0	5.3	18.3	11.9	0.0	0.0
Delay/Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Protradj/Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ddj/del/Veh:	0.0	0.0	0.0	0.0	0.0	4.7	0.0	5.3	18.3	11.9	0.0	0.0

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Top Left Diagram (Split Signal):

Initial Vol:	361***	Signal=Split	Rights=Include
Lanes:	1 0 0 0 1		

Top Right Diagram (Protected Signal):

Initial Vol:	361***	Signal=Protected	Rights=Ignore
Lanes:	1 0 0 0 1		

Bottom Left Diagram (Protected Signal):

Initial Vol:	49***	Signal=Protected	Rights=Include
Lanes:	1 0 1 0 0		

Bottom Right Diagram (Protected Signal):

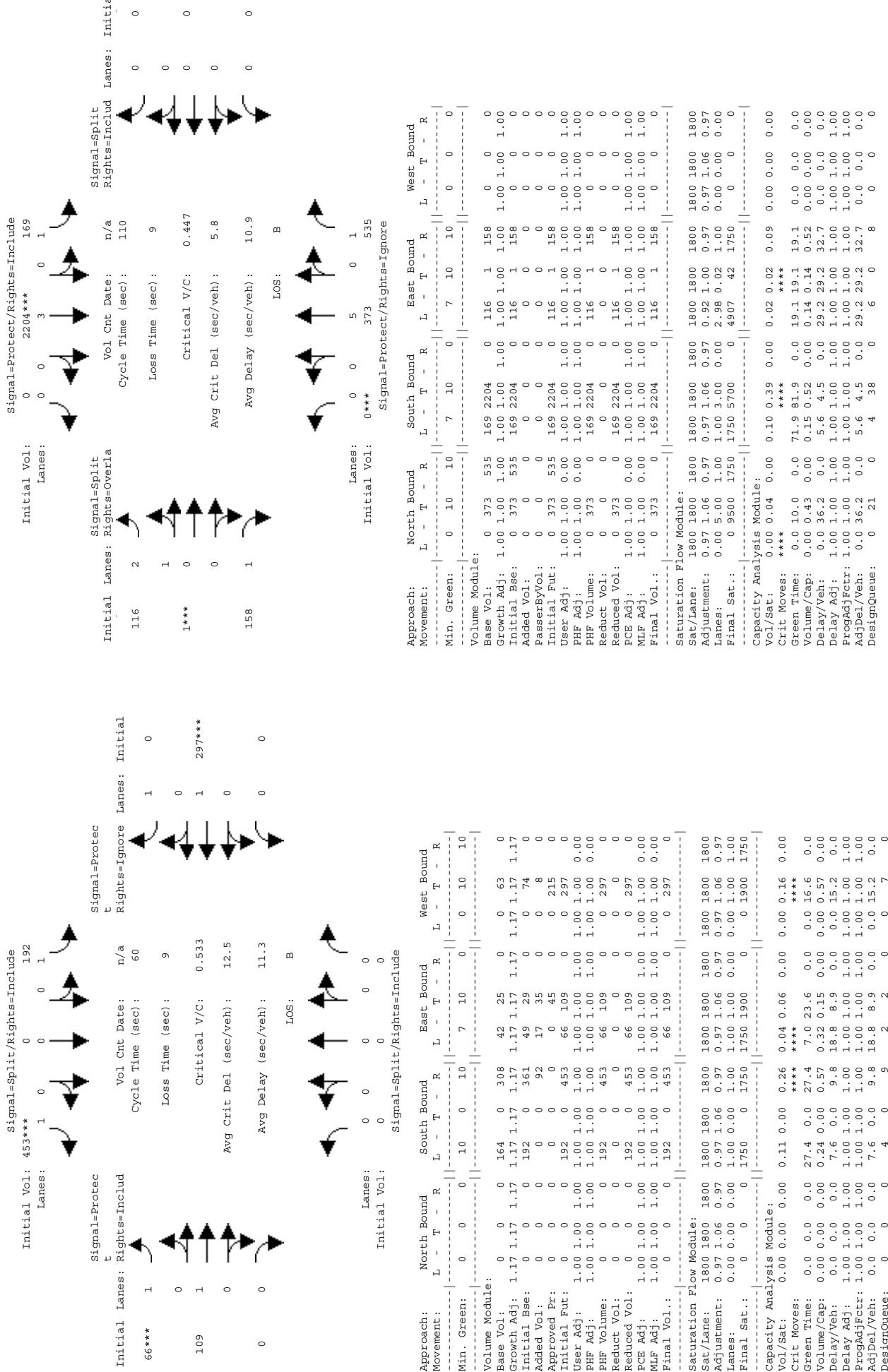
Initial Vol:	86	Signal=Protected	Rights=Ignore
Lanes:	1 0 1 0 0		

Lanes:	0	0	0	0	0	0	0	0	
Initial Vol.:	0	0	0	0	0	0	0	0	
Signal=Split/Rights=Include									
Approach:	North Bound	South Bound	East Bound	West Bound	Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	0	0	10	0	10	0	10	0	10
Volume Module:	0	0	154	0	308	42	25	0	63
Base Vol.:	0	0	1.17	1.17	1.17	1.17	1.17	1.17	1.17
Growth Adj.:	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17
Initial Bcs:	0	0	192	0	361	49	29	0	74
Added Vol.:	0	0	0	0	0	0	12	0	2
Approved Pr.:	0	0	0	0	0	45	0	0	215
Initial Fut.:	0	0	132	0	361	49	86	0	291
User Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volum.:	0	0	192	0	361	49	86	0	291
Reduc. Vol.:	0	0	0	0	0	0	0	0	0
Reduced Vol.:	0	0	192	0	361	49	86	0	291
PCE Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MFH Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol. :	0	0	192	0	361	49	86	0	291
Saturation Flow Module:	1800	1800	1800	1800	1800	1800	1800	1800	1800
Sat/Lane:	0.97	1.06	0.97	1.06	0.97	1.06	0.97	1.06	0.97
Adj/Adjustment:	0.97	1.06	0.97	1.06	0.97	1.06	0.97	1.06	0.97
Lanes:	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00
Final Sat.:	0	0	0	0	1750	0	1750	0	1900

	Vol/Sat:	0.00	0.00	0.11	0.00	0.21	0.03	0.05	0.00	0.00	0.15	0.00
Crit Moves:						*****	*****	*****	*****	*****	*****	*****
Green Time:	0.0	0.0	0.0	0.0	0.0	25.3	0.0	25.3	0.0	0.0	0.18.7	0.0
Volume/Cap:	0.00	0.00	0.00	0.26	0.00	0.49	0.24	0.11	0.00	0.00	0.49	0.00
Delay Yeh:	0.0	0.0	0.0	8.6	0.0	10.1	18.4	7.8	0.0	0.0	13.3	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdj/Fctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Yeh:	0.0	0.0	0.0	8.6	0.0	10.1	18.4	7.8	0.0	0.0	13.3	0.0

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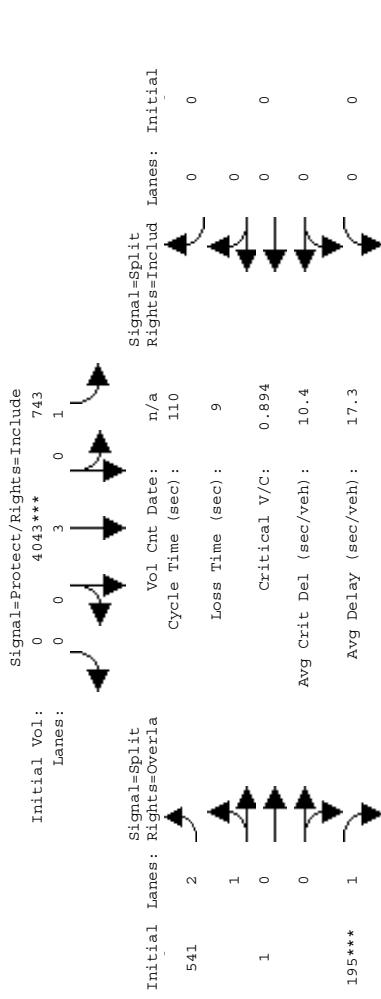


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Intersection #16: 237 EB Ramps/Mathilda



Approach Movement	Min. Green:	North Bound	South Bound	East Bound	West Bound
Initial Vol:	0	373	0	169 2204	0
Vol Cnt Date:	0	1.17 1.17	1.17 1.17	1.17 1.17	1.17 1.17
Cycle Time (sec):	0	1.17 1.17	1.17 1.17	1.17 1.17	1.17 1.17
Loss Time (sec):	9				
Critical V/C:	0.894				
Avg Crit Del (sec/veh):	10.4				
Avg Delay (sec/veh):	17.3				
LOS:	C				
Initial Vol:	0***	765	0	1	
Vol Cnt Date:	0	7	10	0	
Cycle Time (sec):	0	7	10	0	
Loss Time (sec):	0				
Critical V/C:	1***				
Avg Crit Del (sec/veh):	0				
Avg Delay (sec/veh):	195***				
LOS:	C				

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signal=Protect/Rights=Include

Figure 1 consists of two side-by-side signal timing diagrams. The left diagram is for a 2-lane intersection (Signal=Protect/Rights=Include) and the right is for a 4-lane intersection (Signal=Split). Both diagrams show vehicle counts (Vol Cnt), cycle times (Cycle Time (sec)), and critical vehicle counts (Critical V/C). The top section of each diagram shows the signal timing, and the bottom section shows the vehicle count over time.

Parameter	2-lane Intersection (Signal=Protect/Rights=Include)	4-lane Intersection (Signal=Split)
Initial Vol:	226	226
Lanes:	0 1	0 0 0 0
Vol Cnt	226 1578*** 0 0	226 0 0 0 0
Cycle Time (sec):	n/a	110
Critical V/C:	0.625	0.625
Avg Crit Del (sec/veh):	21.9	21.9
Avg Delay (sec/veh):	20.5	20.5

Lanes: 1 0 4 0 0
Initial Vol: 148*** 371 0

Approach:	North Bound	South Bound	East Bound
movement:	L - T - R	L - T - R	L - T - R
Initial Green:	7 10 0	0 10 10	0 0 0
Volume Module:	- - -	- - -	- - -
Base Vol:	148 371 0	0 1578 226	0 0 0
Highway Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Bse:	148 371 0	0 1578 226	0 0 0
Added Vol:	0 0 0	0 0 0	0 0 0
PassengerVol:	0 0 0	0 0 0	0 0 0
PassengerFut:	148 371 0	0 1578 226	0 0 0
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HFE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HHP Volume:	148 371 0	0 1578 226	0 0 0
Reduced Vol:	0 0 0	0 0 0	0 0 0
Reduced Vol:	148 371 0	0 1578 226	0 0 0
CCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HLF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Vol.:	148 371 0	0 1578 226	0 0 0
Final Vol.:	- - -	- - -	- - -
Saturation Flow Module:	- - -	- - -	- - -
at Lane:	1800 1800 1800	1800 1800 1800	1800 1800 1800
Adjustment:	0.97 1.06 0.97	0.97 1.05 1.00	0.97 1.06 0.97
Passances:	1.00 4.00 0.00	0.00 3.48 0.52	0.00 0.00 0.00
Initial Sat.:	1750 7600 0	0 6559 939	0 0 0
Capacity Analysis Module:	- - -	- - -	- - -
Initial Mov.:	0.08 0.05 0.00	0.00 0.24 ***	0.00 0.00 0.00
Initial Time:	14.9 57.3 0.0	0.0 42.4 42.4	0.0 0.0 0.0
Volume/Cap:	0.62 0.09 0.00	0.00 0.62 0.62	0.00 0.00 0.00
Relay/Veh:	37.7 10.1 0.0	0.0 21.1 21.1	0.0 0.0 0.0
Initial Ldjt:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
ProgAdjRect:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
AdjMov.:	37.7 10.1 0.0	0.0 21.1 21.1	0.0 0.0 0.0
AdjVeh.:	0 11 0	0 63 q	0 0 0
AdjLane.:	8 11 0	0 0 0	0 0 0

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signal=Protect/Rights=Include

Figure 1 displays two sets of signal timing diagrams for a four-lane intersection. The top set, labeled "Signal=Protect/Rights=Include", shows a sequence of four green phases followed by a yellow phase and a red phase. The bottom set, labeled "Signal=Split", shows a sequence of four green phases followed by a yellow phase and a red phase. The waveforms are plotted against time, with arrows indicating the start and end of each phase.

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Approach:	North Bound	South Bound	East Bound
movement:	L - T - R	L - T - R	L - T - R
Initial Green:	7 10 0	0 10 10	0 0 0
Volume Module:	- - -	- - -	- - -
Base Vol:	148 371 0	0 1578 226	0 0 0
Highway Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Bse:	148 371 0	0 1578 226	0 0 0
Added Vol:	0 0 0	0 0 0	0 0 0
PassengerVol:	0 0 0	0 0 0	0 0 0
PassengerFut:	148 371 0	0 1578 226	0 0 0
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HFE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HHP Volume:	148 371 0	0 1578 226	0 0 0
Reduced Vol:	0 0 0	0 0 0	0 0 0
Reduced Vol:	148 371 0	0 1578 226	0 0 0
CCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HLF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Vol.:	148 371 0	0 1578 226	0 0 0
Final Vol.:	- - -	- - -	- - -
Saturation Flow Module:	- - -	- - -	- - -
at Lane:	1800 1800 1800	1800 1800 1800	1800 1800 1800
Adjustment:	0.97 1.06 0.97	0.97 1.05 1.00	0.97 1.06 0.97
Passances:	1.00 4.00 0.00	0.00 3.48 0.52	0.00 0.00 0.00
Initial Sat.:	1750 7600 0	0 6559 939	0 0 0
Capacity Analysis Module:	- - -	- - -	- - -
Initial Mov.:	0.08 0.05 0.00	0.00 0.24 ***	0.00 0.00 0.00
Initial Time:	14.9 57.3 0.0	0.0 42.4 42.4	0.0 0.0 0.0
Volume/Cap:	0.62 0.09 0.00	0.00 0.62 0.62	0.00 0.00 0.00
Relay/Veh:	37.7 10.1 0.0	0.0 21.1 21.1	0.0 0.0 0.0
Initial Ldjt:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
ProgAdjRect:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
AdjMov.:	37.7 10.1 0.0	0.0 21.1 21.1	0.0 0.0 0.0
AdjVeh.:	0 11 0	0 63 q	0 0 0
AdjLane.:	8 11 0	0 0 0	0 0 0

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signal=Protect/Rights=Include

Figure 1 displays two sets of signal timing diagrams for a four-lane intersection. The top set, labeled "Signal=Protect/Rights=Include", shows a sequence of four green phases followed by a yellow phase and a red phase. The bottom set, labeled "Signal=Split", shows a sequence of four green phases followed by a yellow phase and a red phase. The waveforms are plotted against time, with arrows indicating the start and end of each phase.

1 0 4 0 0
371 0

Approach:	North Bound	South Bound	East Bound
movement:	L - T - R	L - T - R	L - T - R
Initial Green:	7 10 0	0 10 10	0 0 0
Volume Module:	- - -	- - -	- - -
Base Vol:	148 371 0	0 1578 226	0 0 0
Highway Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Bse:	148 371 0	0 1578 226	0 0 0
Added Vol:	0 0 0	0 0 0	0 0 0
PassengerVol:	0 0 0	0 0 0	0 0 0
PassengerFut:	148 371 0	0 1578 226	0 0 0
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HFE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HHP Volume:	148 371 0	0 1578 226	0 0 0
Reduced Vol:	0 0 0	0 0 0	0 0 0
Reduced Vol:	148 371 0	0 1578 226	0 0 0
CCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HLF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Vol.:	148 371 0	0 1578 226	0 0 0
Final Vol.:	- - -	- - -	- - -
Saturation Flow Module:	- - -	- - -	- - -
at Lane:	1800 1800 1800	1800 1800 1800	1800 1800 1800
Adjustment:	0.97 1.06 0.97	0.97 1.05 1.00	0.97 1.06 0.97
Passances:	1.00 4.00 0.00	0.00 3.48 0.52	0.00 0.00 0.00
Initial Sat.:	1750 7600 0	0 6559 939	0 0 0
Capacity Analysis Module:	- - -	- - -	- - -
Initial Mov.:	0.08 0.05 0.00	0.00 0.24 ***	0.00 0.00 0.00
Initial Time:	14.9 57.3 0.0	0.0 42.4 42.4	0.0 0.0 0.0
Volume/Cap:	0.62 0.09 0.00	0.00 0.62 0.62	0.00 0.00 0.00
Relay/Veh:	37.7 10.1 0.0	0.0 21.1 21.1	0.0 0.0 0.0
Initial Ldjt:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
ProgAdjRect:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
AdjMov.:	37.7 10.1 0.0	0.0 21.1 21.1	0.0 0.0 0.0
AdjVeh.:	0 11 0	0 63 q	0 0 0
AdjLane.:	8 11 0	0 0 0	0 0 0

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signal=Protect/Rights=Include

Figure 1 displays two sets of signal timing diagrams for a four-lane intersection. The top set, labeled "Signal=Protect/Rights=Include", shows a sequence of four green phases followed by a yellow phase and a red phase. The bottom set, labeled "Signal=Split", shows a sequence of four green phases followed by a yellow phase and a red phase. The waveforms are plotted against time, with arrows indicating the start and end of each phase.

1 0 4 0 0
371 0

Approach:	North Bound	South Bound	East Bound
movement:	L - T - R	L - T - R	L - T - R
Initial Green:	7 10 0	0 10 10	0 0 0
Volume Module:	- - -	- - -	- - -
Base Vol:	148 371 0	0 1578 226	0 0 0
Highway Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Bse:	148 371 0	0 1578 226	0 0 0
Added Vol:	0 0 0	0 0 0	0 0 0
PassengerVol:	0 0 0	0 0 0	0 0 0
PassengerFut:	148 371 0	0 1578 226	0 0 0
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HFE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HHP Volume:	148 371 0	0 1578 226	0 0 0
Reduced Vol:	0 0 0	0 0 0	0 0 0
Reduced Vol:	148 371 0	0 1578 226	0 0 0
CCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HLF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Vol.:	148 371 0	0 1578 226	0 0 0
Final Vol.:	- - -	- - -	- - -
Saturation Flow Module:	- - -	- - -	- - -
at Lane:	1800 1800 1800	1800 1800 1800	1800 1800 1800
Adjustment:	0.97 1.06 0.97	0.97 1.05 1.00	0.97 1.06 0.97
Passances:	1.00 4.00 0.00	0.00 3.48 0.52	0.00 0.00 0.00
Initial Sat.:	1750 7600 0	0 6559 939	0 0 0
Capacity Analysis Module:	- - -	- - -	- - -
Initial Mov.:	0.08 0.05 0.00	0.00 0.24 ***	0.00 0.00 0.00
Initial Time:	14.9 57.3 0.0	0.0 42.4 42.4	0.0 0.0 0.0
Volume/Cap:	0.62 0.09 0.00	0.00 0.62 0.62	0.00 0.00 0.00
Relay/Veh:	37.7 10.1 0.0	0.0 21.1 21.1	0.0 0.0 0.0
Initial Ldjt:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
ProgAdjRect:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
AdjMov.:	37.7 10.1 0.0	0.0 21.1 21.1	0.0 0.0 0.0
AdjVeh.:	0 11 0	0 63 q	0 0 0
AdjLane.:	8 11 0	0 0 0	0 0 0

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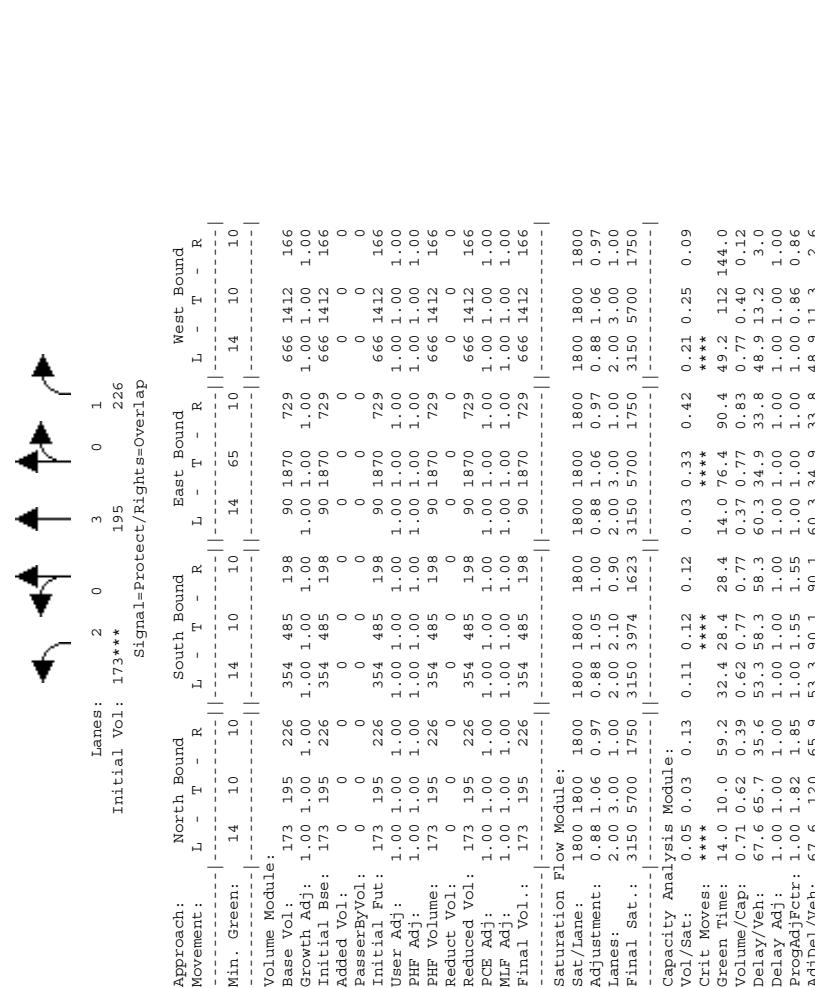
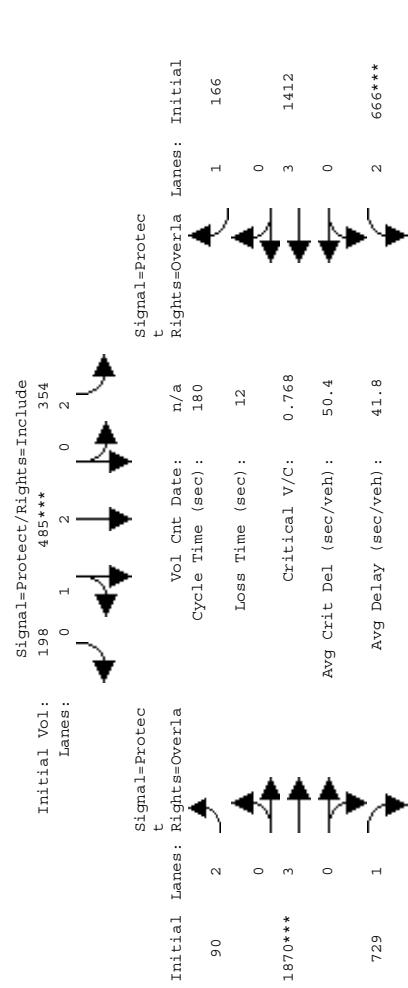
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Intersection #19: Central/Mary
Intersection #19: Central/Mary

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Intersection #19: Central/Mary

Signal=Protect/Rights=Include									
Initial Vol:	136***	Lanes:	0	1	2	0	0	0	0
Initial Lanes:	Rights-Overla	Vol Cnt Date:	n/a						
30	2	Cycle Time (sec):	180						
345***	3	Loss Time (sec):	12						
0		Critical V/C:	0.225						
159	1	Avg Crit Del (sec/veh):	42.2						
		Avg Delay (sec/veh):	42.2						
		LOS:	E+						
Signal=Protect/Rights=Overlap									
Approach:	North Bound	South Bound	East Bound	West Bound					
Movement:	L - T - R	L - T - R	L - T - R	L - T - R					
Min. Green:	14	10	14	10	14	65	10	14	10
Volume Module:									
Base Vol:	0	0	0	0	0	0	0	0	0
Growth Adj:	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17
Initial Bee:	0	0	0	0	0	0	0	0	0
Added Vol:	0	30	0	0	0	0	0	128	3
Approved Tr:	39	5	30	0	20	136	30	345	159
Initial Fut:	39	5	30	0	20	136	30	345	159
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	39	5	30	0	20	136	30	345	159
Reduced Vol:	39	5	30	0	20	136	30	345	159
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	39	5	30	0	20	136	30	345	159
Saturation Flow Module:									
Sat Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.881.06	0.97	0.88	1.06	0.97	0.88	1.06	0.97	0.88
Lanes:	0.00	3.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	3800	1750	3150	5700	1750
Capacity Analysis Module:									
Vol/Sat:	0.01	0.00	0.02	0.00	0.01	0.08	0.01	0.06	0.09
Crit Moves:	****		****		****		****		****
Green Time:	9.7	70.8	103.0	0.0	61.1	61.1	87.2	65.0	74.7
Volume/Cap:	0.23	0.00	0.03	0.00	0.02	0.23	0.02	0.17	0.22
Delay/Veh:	62.1	25.7	0.0	30.7	32.4	18.4	29.7	25.8	48.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFcrr:	1.00	1.85	1.85	1.00	1.85	1.85	1.00	1.00	1.00
Addl Del/Veh:	62.1	46.6	23.6	0.0	55.5	59.9	18.4	23.7	25.8
DesignQueue:	4	0	1	0	1.1	9	2	22	10

A P P E N D I X B 7

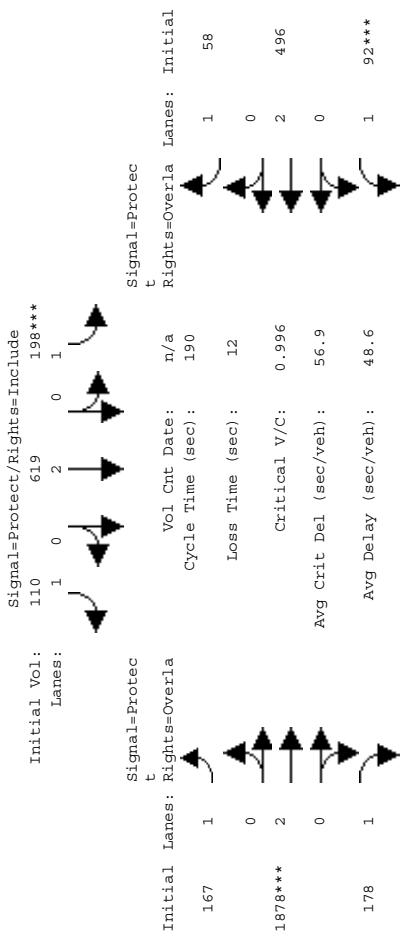
LEVEL OF SERVICE CALCULATIONS:
ALTERNATIVE 3



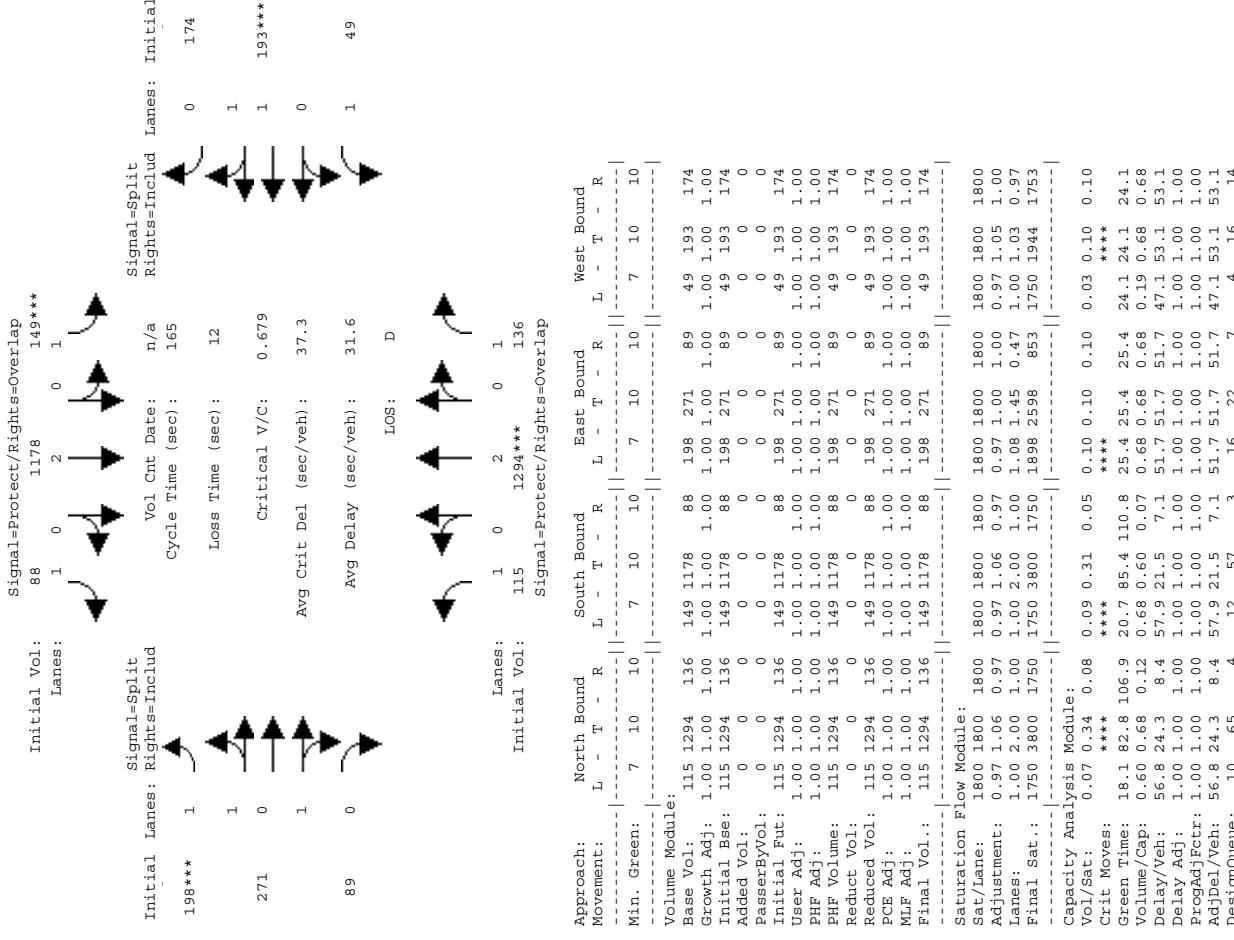
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Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM Peak

Intersection #1: Middlefield/Shoreline



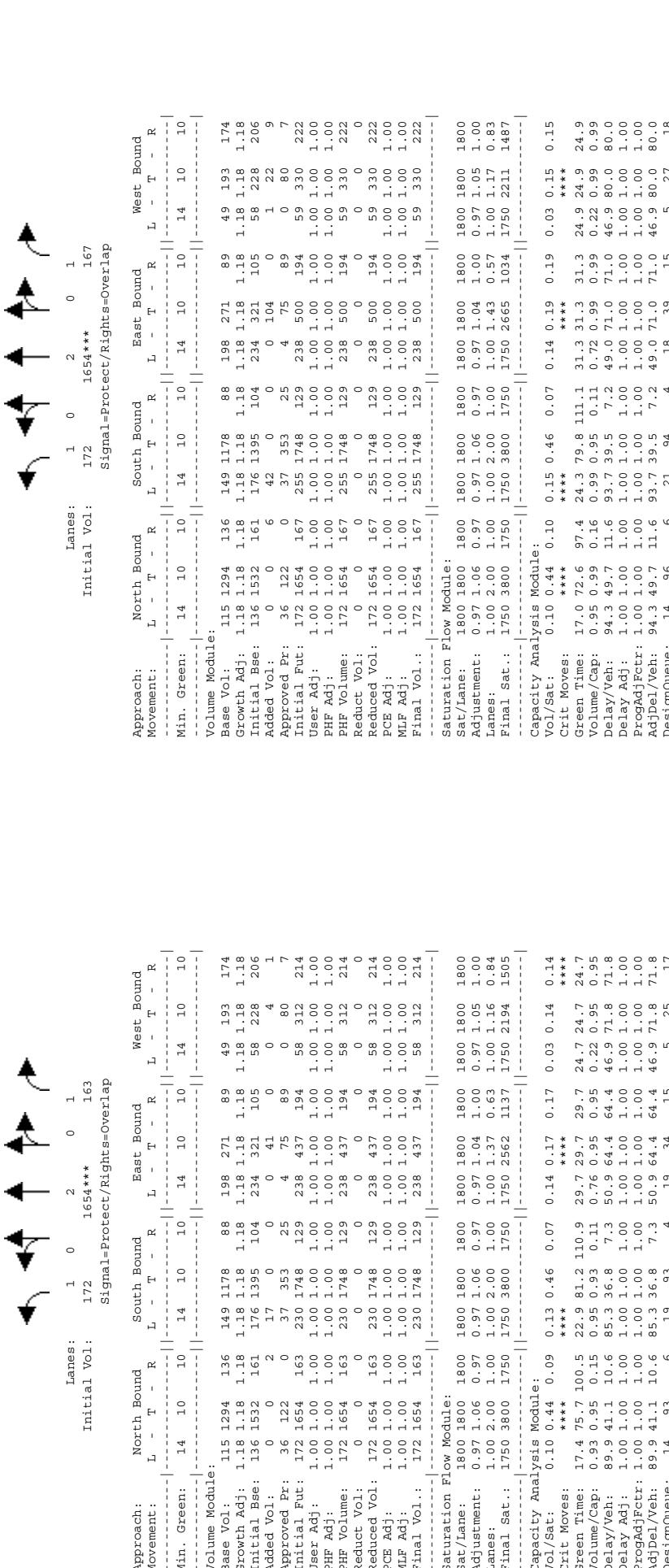
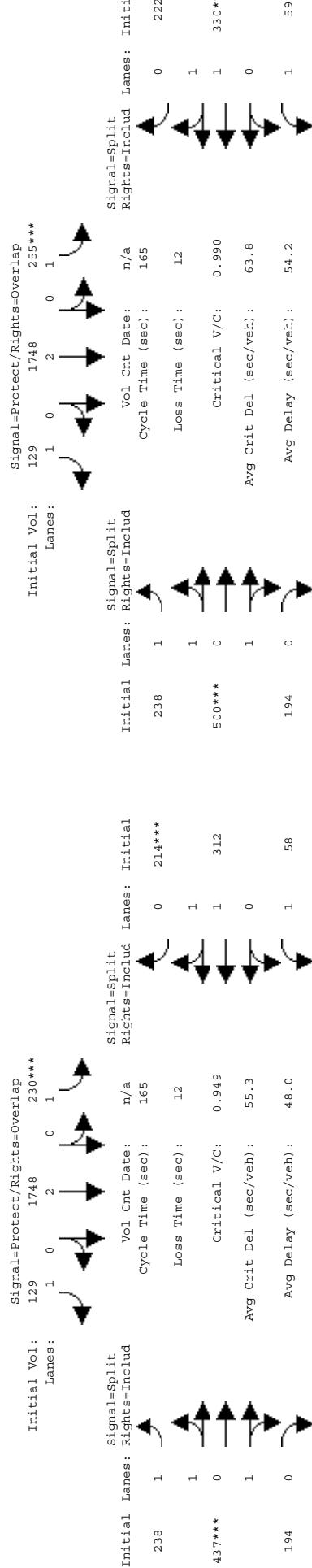
Intersection #2: Moffett/Central Expressway



Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
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1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 3

Intersection #2: Moffett/Central Expressway



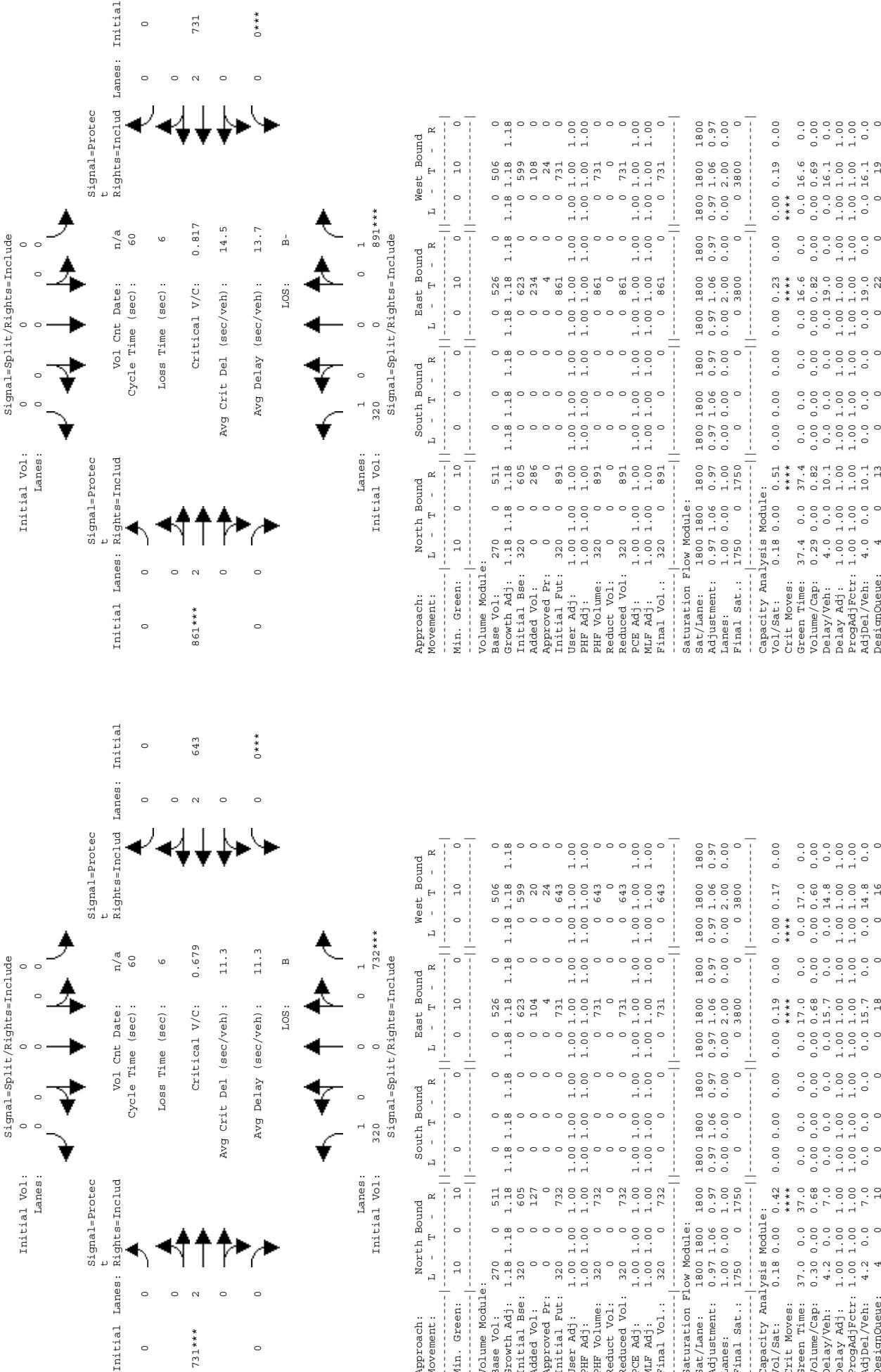
Level Of Service Computation Report
HCM Operations (Future Volume Alternative)
AM Peak

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 5 HCM Operations (Future Volume Alternative)
 AM 2013 Project Alt. 1

Intersection #3: Moffatt/Middlefield

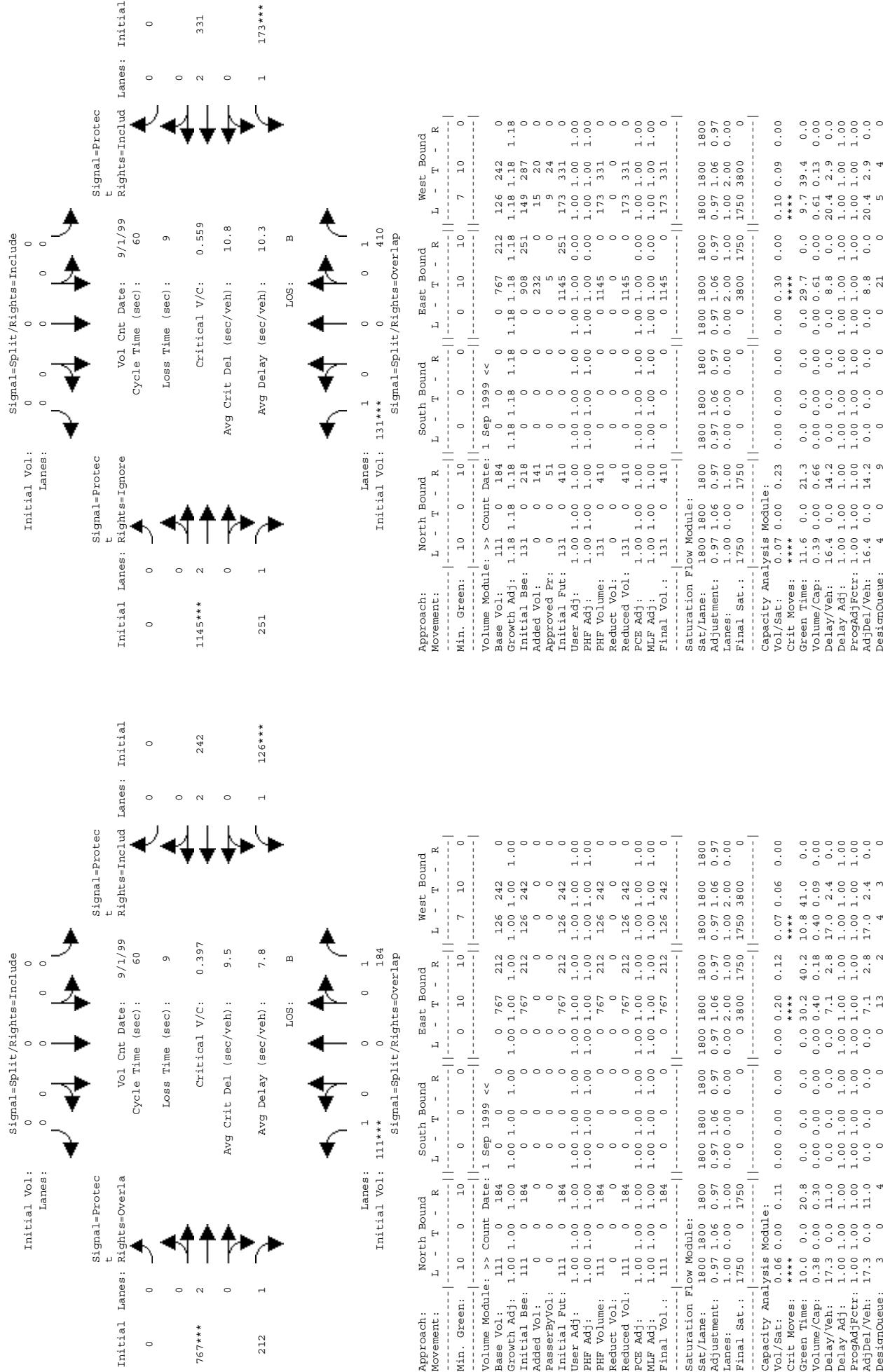
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1

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1985 HCM Operations (Future Volume Alternative)
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Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM Peak

Intersection #5: Moffett/101 SB Ramps
Intersection #5: Moffett/101 SB Ramps
Level Of Service Computation Report
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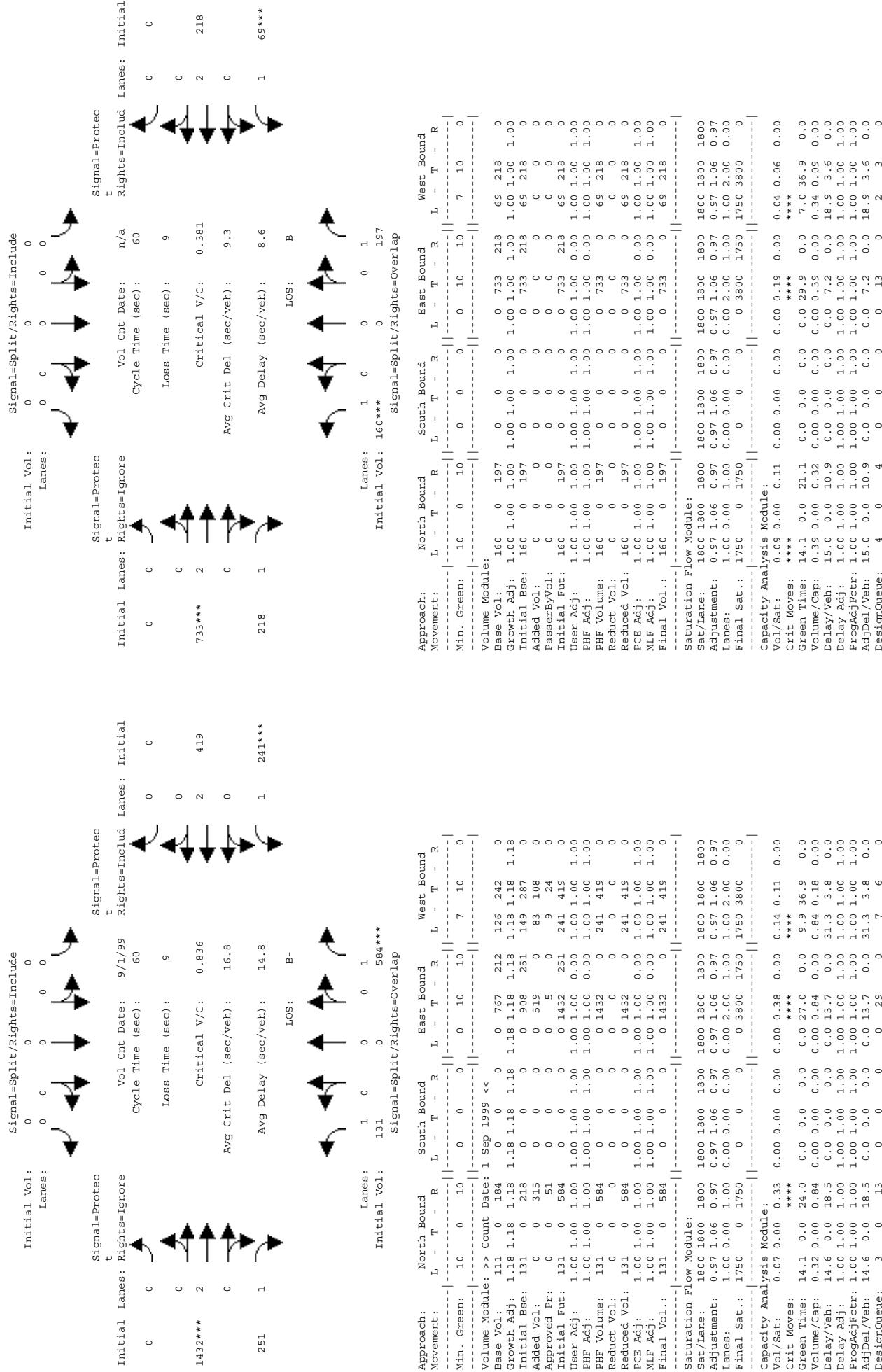


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1985 HCM Operations (Future Volume Alternative)
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Intersection #5: Moffett/101 SB Ramps
Intersection #6: Moffett/101 NB Ramps

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)

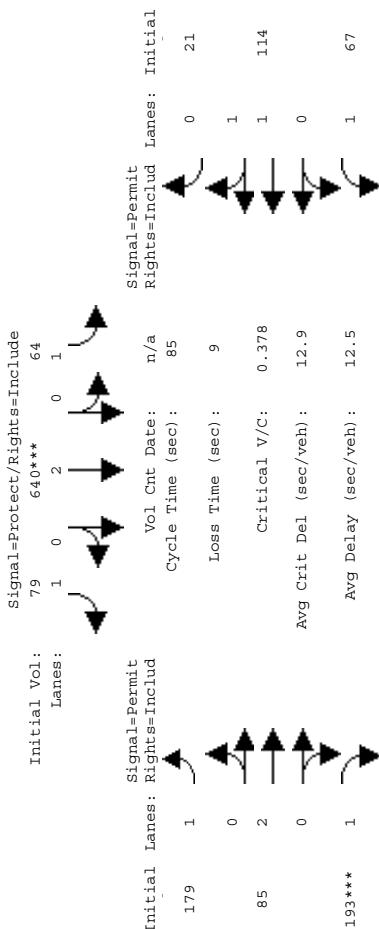
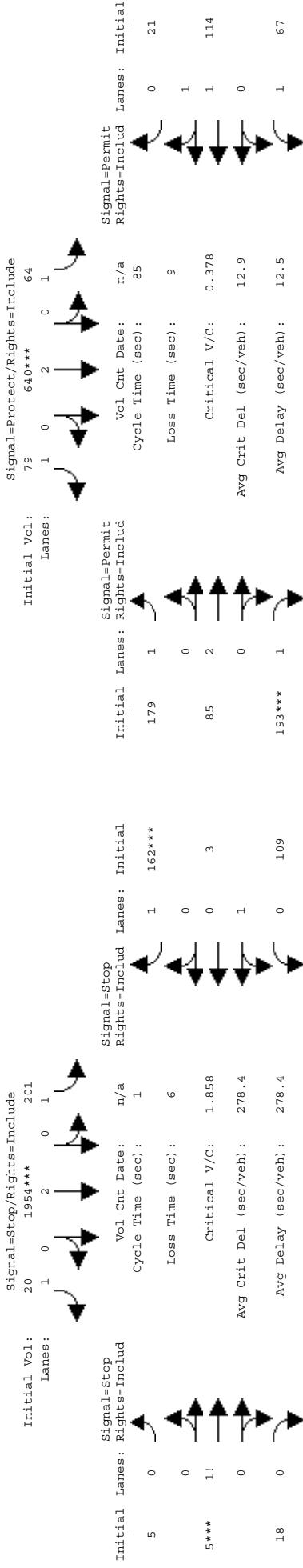
AM Peak



Level Of Service Computation Report
1997 HCM 4-Way Stop (Future Volume Alternative)
AM 2013 Project Alt. 3

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM Peak

Intersection #7: Moffett-Clark/Moffett Extension

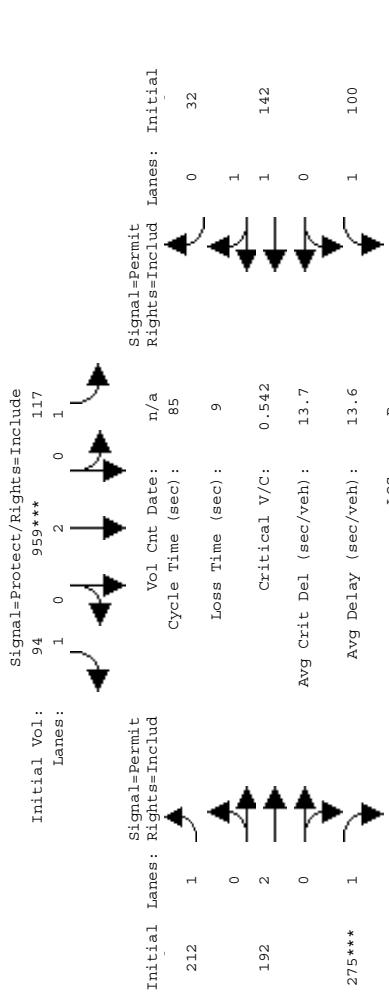


Approach Movement:	North Bound	South Bound	East Bound	West Bound
Initial Vol:	103	502	60	64
Growth Adj:	1.00	1.00	1.00	1.00
Initial Bee:	103	502	60	64
Added Vol:	0	0	0	0
Approved Pr:	0	0	0	0
Initial Fut:	103	502	60	64
User Adj:	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00
PHF Volume:	103	502	60	64
Reducit Vol:	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00
Final Vol.:	103	502	60	64
Saturation Flow Module:				
Adjusment:	1.00	1.00	1.00	1.00
Lanes:	0.011.70	0.29	1.00	0.64
Final Sat.:	7 833	143	484 1052	576 80
Capacity Analysis Module:				
Crit Moves:	0.46	0.45	0.42	0.42
Delay/Veh:	16.0	15.7	15.4	15.0
Delay Adj.:	1.00	1.00	1.00	1.00
AdiDel/Veh:	16.0	15.7	15.4	15.0
Los by Move:	C C	C C	F A	B B
ApproachDel:	15.7	15.7	369.1	11.2
Delay Adj.:	1.00	1.00	1.00	1.00
ApprAdjDel:	15.7	15.7	369.1	11.2
Los by Appr:	C	C	F	B
Vol/Sat:	0.06	0.13	0.03	0.04
Crit Moves:	****	****	0.27	0.27
Delay/Veh:	16.0	15.7	15.4	15.0
Delay Adj.:	1.00	1.00	1.00	1.00
AdiDel/Veh:	16.0	15.7	15.4	15.0
Los by Move:	C C	C C	F A	B B
ApproachDel:	15.7	15.7	369.1	11.2
Delay Adj.:	1.00	1.00	1.00	1.00
ApprAdjDel:	15.7	15.7	369.1	11.2
Los by Appr:	C	C	F	B
Vol/Sat:	0.06	0.13	0.03	0.04
Crit Moves:	****	****	0.27	0.27
Green Time:	13.3	44.2	44.2	44.2
Volume/Cap:	0.38	0.25	0.07	0.44
Delay/Veh:	24.9	8.6	7.7	29.7
Delay Adj.:	1.00	1.00	1.00	1.00
ProgAdjFcrt:	1.00	0.85	0.85	1.00
AddDel/Veh:	24.9	7.3	6.6	29.7
Designqueue:	4	12	1	18.2

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
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1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 3

Intersection #8: Whisman/Middlefield



Approach:		North Bound	South Bound	East Bound	West Bound	Approach:	North Bound	South Bound	East Bound	West Bound
Movement:		L - T - R	L - T - R	L - T - R	L - T - R	Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:		7	10	7	10	Min. Green:	7	10	7	10
Volume Module:		Base Vol:	103	502	60	64	640	60	64	640
Approach:		Growth Adj:	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18
Movement:		Initial Bee:	122	594	76	758	94	71	76	758
Min. Green:		Added Vol:	0	27	0	0	0	66	0	0
Volume Module:		Approved Pr:	9	164	41	199	0	52	164	41
Approach:		Initial Fct:	121	673	235	117	959	94	235	117
Movement:		User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Min. Green:		PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume Module:		PHF Volume:	131	673	235	117	959	94	235	117
Approach:		Reducit Vol:	0	0	0	0	0	0	0	0
Movement:		PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Min. Green:		MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume Module:		Final Vol.:	131	673	235	117	959	94	235	117
Approach:		Saturation Flow Module:	1800	1800	1800	1800	1800	1800	1800	1800
Movement:		Crit Moves:	0.97	1.06	0.97	1.06	0.97	1.06	0.97	1.06
Min. Green:		Green Time:	11.7	44.3	44.3	7.0	39.6	39.6	44.8	44.8
Volume/Cap:		Volume/Cap:	0.54	0.34	0.26	0.81	0.54	0.12	0.42	0.18
Delay/Veh:		Delay/Veh:	27.8	9	8	48.1	12.6	9.7	18.9	17.4
Delay Adj:		Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:		ProgAdjFctr:	1.00	0.85	0.85	1.00	0.85	1.00	0.85	0.85
AdjDel/Veh:		AdjDel/Veh:	27.8	7.7	7.3	48.1	10.7	8.3	18.9	14.6
DesInqueue:		DesInqueue:	5	16	5	5	5	5	5	5

1985 HCM Operations (Future Volume Alternative)
AM Peak

Level Of Service Computation Report
 5 HCM Operations (Future Volume Alternative)
 AM 2013 Project Alt. 1

Figure 1 consists of four sub-diagrams arranged in a 2x2 grid, illustrating traffic signal timing for two different signal types: 'Split' and 'Protected'.

- Top Row (Split Signal):**
 - Initial Vol:** 0
 - Lanes:** 0 0 0
 - Signal=:** Split
 - Rights=:** Includ
 - Vol Cnt Date:** n/a
 - Cycle Time (sec):** 90
 - Loss Time (sec):** 9
 - Critical V/C:** 0.547
 - Avg Crit Del (sec/veh):** 15.0
 - Avg Delay (sec/veh):** 11.3
- Bottom Row (Protected Signal):**
 - Initial Vol:** 0
 - Lanes:** 0 0 0
 - Signal=:** Protect/Rights=Include
 - Rights=:** 227***
 - Vol Cnt Date:** n/a
 - Cycle Time (sec):** 90
 - Loss Time (sec):** 9
 - Critical V/C:** 0.547
 - Avg Crit Del (sec/veh):** 15.0
 - Avg Delay (sec/veh):** 11.3

Lanes:	0	0	1	1	0	
Initial Vol.:	0	709***	709***	394		
Signal=Protect/Rights=Overlap						
Approach:	North Bound	South Bound	East Bound	West Bound		
Movement:	L - T - R	L - T + R	L - T - R	L - T -		
Initial Bse:	0 10 10	7 10 0	0 0 0	0 0 0		
Initial Green:	0	10	10	10		
Volume Module:						
Base Vol.:	0 709 394	227 673 0	0 0 0	0 0 0	204 0	
Growth/Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
Initial Bse:	0 709 394	227 673 0	0 0 0	0 0 0	204 0	
Added Vol.:	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	
PassByVol:	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	
User Initial Fut:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
User Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
HFV Volume:	0 709 394	227 673 0	0 0 0	0 0 0	204 0	
Reduced Vol.:	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	
Reduced Vol.:	0 709 394	227 673 0	0 0 0	0 0 0	204 0	
PCF Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
MLIF Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
Final Vol.:	0 709 394	227 673 0	0 0 0	0 0 0	204 0	
Saturation Flow Module:						
Vol./Lane:	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800	
Adj/Adjustment:	0.97 1.04 1.00	0.97 1.06 0.97	1.06 0.97 1.06	0.97 1.06 0.97	0.88 1.06 0.88	
Final Sat.:	0 2377 1321	1750 3850 0	0 0 0	0 0 0	2150 0 0	
Capacity Analysis Module:						
Vol/Sat.:	0.00 0.30 0.30	0.13 0.18 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.06 0.00 0.00	
Exit Moves:						
Volume/Cap.:	0.00 0.49 0.55	59.7 21.3 70.4	0.0 0.0 0.0	0.0 0.0 0.0	10.6 0.0 0.0	
Delay/Veh.:	0.00 0.55 0.45	0.55 0.23 0.55	0.00 0.00 0.00	0.00 0.00 0.00	0.55 0.00 0.00	
Delay/Adj.:	1.00 1.00 1.00	5.6 24.1 2.0	0.0 0.0 0.0	0.0 0.0 0.0	29.7 0.0 0.0	
Prog/Adj/Drct.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
Adj/Del/Veh.	0.0 10.3 5.6	5.6 24.1 2.0	0.0 0.0 0.0	0.0 0.0 0.0	29.7 0.0 0.0	
Environment:	0 17	9 8 0	0 0 0	0 0 0	9 0 0	

1985 H

Level Of Service Computation Report
 5 HCM Operations (Future Volume Alternative)
 AM 2013 Project Alt. 1

Figure 1 consists of two rows of four traffic signal timing diagrams each. The top row is labeled "Signal=Split Rights=Includ" and the bottom row is labeled "Signal=Protected/Rights=Include". Each diagram shows a waveform representing signal status (red or green) over time (sec). The x-axis for all diagrams ranges from 0 to 90 seconds.

Row	Column	Signal Type	Rights	Vol	Cnt	Date:	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):
Top Row (Split)	1	Split	Includ	0	673	n/a	90	9	0.547	15.0	11.3
	2	Split	Includ	0	2						
	3	Split	Includ	0	0						
	4	Split	Includ	0	1						
Bottom Row (Protected)	1	Protected	Include	0	673	n/a	90	9	0.547	15.0	11.3
	2	Protected	Include	0	2						
	3	Protected	Include	0	0						
	4	Protected	Include	0	1						

Lanes:	0	0	1	1	0	
Initial Vol.:	0	709***	709***	394		
Signal=Protect/Rights=Overlap						
Approach:	North Bound	South Bound	East Bound	West Bound		
Movement:	L - T - R	L - T + R	L - T - R	L - T -		
Initial Bse:	0 10 10	7 10 0	0 0 0	0 0 0		
Initial Green:	0	0	0	0		
Volume Module:						
Base Vol.:	0 709 394	227 673 0	0 0 0	0 0 0	204 0	
Growth/Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
Initial Bse:	0 709 394	227 673 0	0 0 0	0 0 0	204 0	
Added Vol.:	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	
PassByVol:	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	
User Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
HF Volume:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
Reduced Vol.:	0 709 394	227 673 0	0 0 0	0 0 0	204 0	
Reduced Vol.:	0 709 394	227 673 0	0 0 0	0 0 0	204 0	
PCB Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
MLF Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
Final Vol.:	0 709 394	227 673 0	0 0 0	0 0 0	204 0	
Saturation Flow Module:						
Vol./Lane:	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800	
Adj/Adjustment:	0.97 1.04 1.00	0.97 1.06 0.97	1.06 0.97 1.06	0.97 1.06 0.97	0.88 1.06 0.88	
Final Sat.:	0 2377 1321	1750 3850 0	0 0 0	0 0 0	3150 0 0	
Capacity Analysis Module:						
Vol/Sat.:	0.00 0.30 0.30	0.13 0.18 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.06 0.00 0.00	
Exit Moves:						
Volume Time:	0.0 49.0 59.7	21.3 70.4 0.0	0.0 0.0 0.0	0.0 0.0 0.0	10.6 0.0 0.0	
Volume/Cap:	0.00 0.50 0.45	0.55 0.23 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.55 0.00 0.00	
Delay/Veh:	0.0 10.3 5.6	24.1 2.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	29.7 0.0 0.0	
Delay/Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
Prog/Adj/ctr:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
Adj/Del/Veh:	0.0 10.3 5.6	24.1 2.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	29.7 0.0 0.0	
Environment:	0.0 17	9 8 0	0 0 0	0 0 0	9 0 0	

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1

Level Of Service Computation Report
 5 HCM Operations (Future Volume Alternative)
 AM 2013 Project Alt. 1

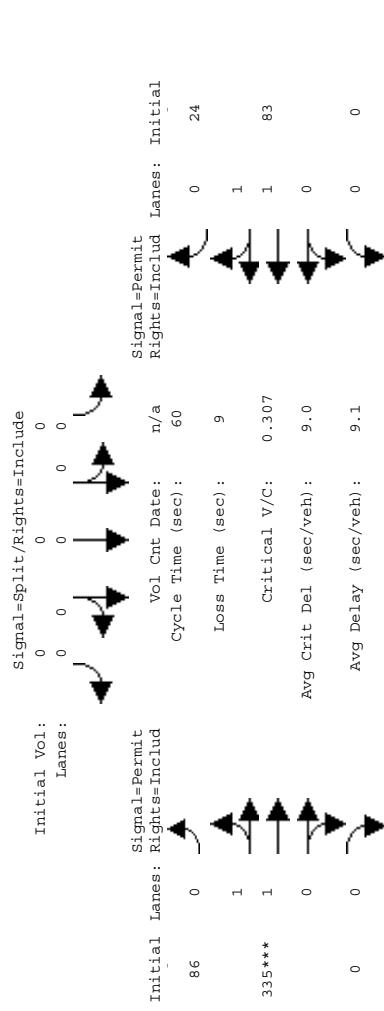
Figure 1 consists of four sub-diagrams arranged in a 2x2 grid, illustrating traffic signal timing for two different signal types: 'Split' and 'Protected'.

- Top Row (Split Signal):**
 - Initial Vol:** 0
 - Lanes:** 0 0 0
 - Signal=:** Split
 - Rights=:** includ
- Bottom Row (Protected Signal):**
 - Initial Vol:** 0
 - Lanes:** 0 0 0
 - Signal=:** Protected
 - Rights=:** includ
- Common Parameters:**
 - Vol Cnt Date:** n/a
 - Cycle Time (sec):** 90
 - Loss Time (sec):** 9
 - Critical V/C:** 0.547
 - Avg Crit Del (sec/veh):** 15.0
 - Avg Delay (sec/veh):** 11.3

Lanes:	0	0	1	1	0	
Initial Vol.:	0	709***	709***	394		
Signal=Protect/Rights=Overlap						
Approach:	North Bound	South Bound	East Bound	West Bound		
Movement:	L - T - R	L - T + R	L - T - R	L - T -		
Initial Bse:	0 10 10	7 10 0	0 0 0	0 0 0		
Initial Green:	0	10	10	10		
Volume Module:						
Base Vol.:	0 709 394	227 673 0	0 0 0	0 0 0	204 0	
Growth/Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
Initial Bse:	0 709 394	227 673 0	0 0 0	0 0 0	204 0	
Added Vol.:	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	
PassByVol:	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	
User Initial Fut:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
User Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
HFV Volume:	0 709 394	227 673 0	0 0 0	0 0 0	204 0	
Reduced Vol.:	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	
Reduced Vol.:	0 709 394	227 673 0	0 0 0	0 0 0	204 0	
PCF Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
MLIF Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
Final Vol.:	0 709 394	227 673 0	0 0 0	0 0 0	204 0	
Saturation Flow Module:						
Vol./Lane:	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800	
Adj/Adjustment:	0.97 1.04 1.00	0.97 1.06 0.97	1.06 0.97 1.06	0.97 1.06 0.97	0.88 1.06 0.88	
Final Sat.:	0 2377 1321	1750 3850 0	0 0 0	0 0 0	2150 0 0	
Capacity Analysis Module:						
Vol/Sat:	0.00 0.30 0.30	0.13 0.18 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.06 0.00 0.00	
Exit Moves:						
Volume Time:	0.0 49.0 59.7	21.3 70.4 0.0	0.0 0.0 0.0	0.0 0.0 0.0	10.6 0.0 0.0	
Volume/Cap:	0.00 0.50 0.45	0.55 0.23 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.55 0.00 0.00	
Delay/Veh:	0.0 10.3 5.6	24.1 2.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	29.7 0.0 0.0	
Delay/Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
Prog/Adj/ctr:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
Adj/Del/Veh:	0.0 10.3 5.6	24.1 2.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	29.7 0.0 0.0	
Environment:	0.17	7.9 8.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM Peak

Intersection #11: Ellis/101 NB Ramps
Intersection #11: Ellis/101 NB Ramps
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1



Initial Vol: 265*** Lanes: 1
Signal=Split/Rights=Include
Vol Cnt Date: 9 Critical V/C: 1.7
Loss Time (sec): 0
Avg Delay (sec/veh): 0
LOS: B

Initial Vol: 762*** Signal=Split/Rights=Include
Lanes: 10
Loss Time (sec): 11
Avg Delay (sec/veh): 11
LOS: C

Saturation Flow Module:

Vol/Sat:	0.15 0.01 0.01	0.00 0.00 0.00	0.00 0.11 0.11	0.00 0.00 0.03	0.03
Crit Moves:	*****				
Green Time:	28.8	28.8	0.0	22.2	22.2
Volume/Cap:	0.31 0.03	0.00 0.00 0.00	0.31 0.31	0.00 0.00 0.08	0.08
Delay/Veh:	7.3	6.3	0.0	10.2	10.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00
AddDel/Veh:	7.3	6.3	0.0	10.2	10.2
Designdqueue:	5	0	0	2	1

Volume Module:

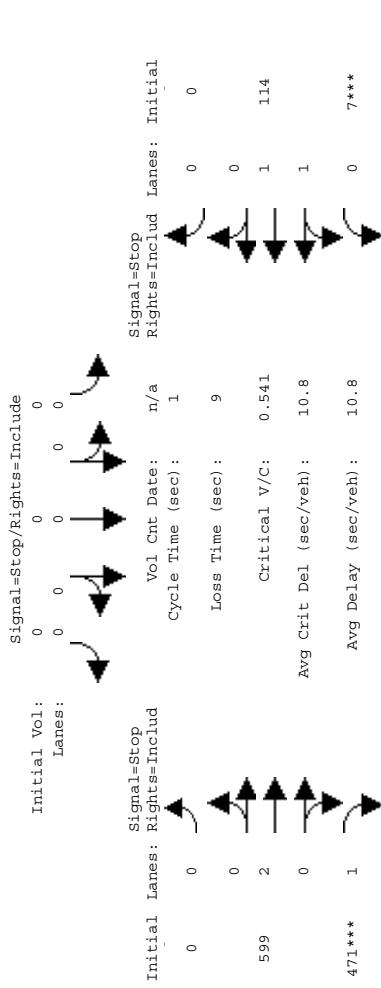
Base Vol:	265	9	17	0	0	0	86	335	0	0	86	335	0	0	83	24
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.18	1.18	1.18	1.18	1.18	1.18
Initial Bee:	265	9	17	0	0	0	86	335	0	0	112	314	11	0	98	28
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	0
Approved Pr:	448	0	0	0	0	0	0	0	0	0	0	0	0	0	12	20
Initial Fct:	762	11	11	180	180	180	0	0	0	0	154	722	0	0	133	48
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	762	11	11	180	0	0	0	0	0	0	154	722	0	0	133	48
Reducit Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MFL Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	265	9	17	0	0	0	86	335	0	0	154	722	0	0	133	48

Approach:	North Bound	South Bound	East Bound	West Bound	Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	10 10	10 10	0 10	0 10	Min. Green:	10 10	10 10	0 10	0 10
Volume Module:	-----	-----	-----	-----	Volume Module:	-----	-----	-----	-----
Base Vol:	265	9	17	0	Base Vol:	265	9	17	0
Growth Adj:	1.18	1.18	1.18	1.18	Growth Adj:	1.18	1.18	1.18	1.18
Initial Bee:	314	11	20	0	Initial Bee:	314	11	20	0
Added Vol:	0	0	0	0	Added Vol:	0	0	0	0
Approved Pr:	448	0	0	0	Approved Pr:	448	0	0	0
Initial Fct:	762	11	11	180	Initial Fct:	762	11	11	180
User Adj:	1.00	1.00	1.00	1.00	User Adj:	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	PHF Adj:	1.00	1.00	1.00	1.00
PHF Volume:	762	11	11	180	PHF Volume:	762	11	11	180
Reducit Vol:	0	0	0	0	Reducit Vol:	0	0	0	0
Reduc Vol:	762	11	11	180	Reduc Vol:	762	11	11	180
PCE Adj:	1.00	1.00	1.00	1.00	PCE Adj:	1.00	1.00	1.00	1.00
MFL Adj:	1.00	1.00	1.00	1.00	MFL Adj:	1.00	1.00	1.00	1.00
Final Vol.:	265	9	17	0	Final Vol.:	762	11	11	180
Saturation Flow Module:	-----	-----	-----	-----	Saturation Flow Module:	-----	-----	-----	-----
Vol/Lane:	1800	1800	1800	1800	Vol/Lane:	1800	1800	1800	1800
Adjustment:	1.00	1.00	1.00	1.00	Adjustment:	1.00	1.00	1.00	1.00
Lanes:	1.00	0.35	0.65	0.00	Lanes:	1.00	0.35	0.65	0.00
Final Sat.:	1800	623	1177	0	Final Sat.:	1800	104	1696	0
Capacity Analysis Module:	-----	-----	-----	-----	Capacity Analysis Module:	-----	-----	-----	-----
Vol/Sat:	0.15 0.01 0.01	0.00 0.00 0.00	0.00 0.11 0.11	0.00 0.00 0.03	Vol/Sat:	0.42 0.11 0.11	0.00 0.00 0.00	0.00 0.24 0.24	0.00 0.00 0.05
Crit Moves:	*****				Crit Moves:	*****			
Green Time:	58.4	58.4	58.4	58.4	Green Time:	58.4	58.4	58.4	58.4
Volume/Cap:	0.73	0.18	0.18	0.18	Volume/Cap:	0.73	0.18	0.18	0.18
Delay/Veh:	12.9	7.4	7.4	7.4	Delay/Veh:	12.9	7.4	7.4	7.4
Delay Adj:	1.00	1.00	1.00	1.00	Delay Adj:	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	ProgAdjFctr:	1.00	1.00	1.00	1.00
AddDel/Veh:	12.9	7.4	7.4	7.4	AddDel/Veh:	12.9	7.4	7.4	7.4
Designqueue:	20	0	0	0	Designqueue:	20	0	0	0

Level Of Service Computation Report
1997 HCM 4-Way Stop (Future Volume Alternative)
AM 2013 Project Alt. 1

Level of Service Computation Report
1997 HCM 4-Way Stop (Future Volume Alternative)
AM 2013 Project Alt. 3

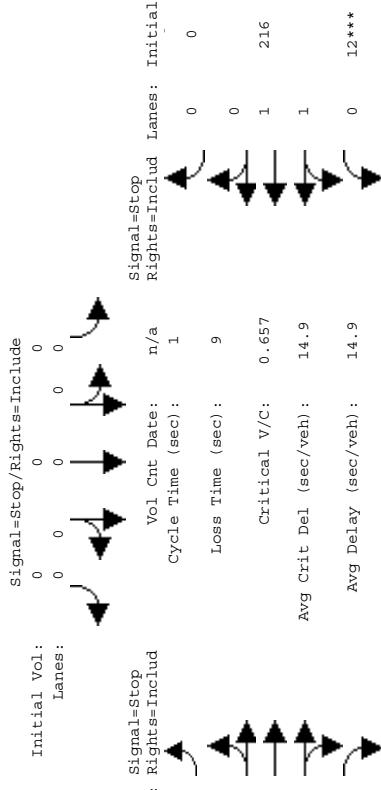
Intersection #12: Ellis/Manila



Initial Vol: 54***
Lanes: 0
Signal=Stop/Rights=Include

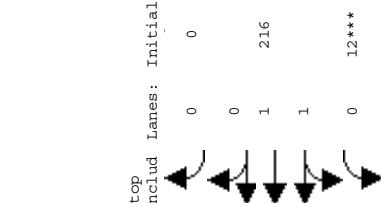
Initial Vol: 54***
Lanes: 0
Signal=Stop Rights=Includ
Vol Cnt Date: n/a
Cycle Time (sec): 10.8
Loss Time (sec): 0
Critical V/C: 0.541
Avg Crit Del (sec/veh): 10.8
Avg Delay (sec/veh): 0
LOS: B

Intersection #12: Ellis/Manila



Initial Vol: 66***
Lanes: 0
Signal=Stop/Rights=Include

Initial Vol: 66***
Lanes: 0
Signal=Stop Rights=Includ
Vol Cnt Date: n/a
Cycle Time (sec): 1
Loss Time (sec): 9
Critical V/C: 0.657
Avg Crit Del (sec/veh): 14.9
Avg Delay (sec/veh): 14.9
LOS: B



Approach: North Bound
Movement: L - T - R
Min. Green: 7
Volume Module:
Base Vol: 19
Growth Adj: 1.18
Initial Bee: 22
Added Vol: 0
Approved Pr: 32
Initial Fut: 54
User Adj: 1.00
PHF Adj: 1.00
PHF Volume: 54
Reduc Vol: 0
Reduced Vol: 54
PCE Adj: 1.00
MLF Adj: 1.00
Final Vol.: 54
Saturation Flow Module:
Adjustment: 1.00
Lanes: 0.74
Final Sat.: 452
Capacity Analysis Module:
Crit Moves: *****
Delay/Veh: 9.3
Adel/Veh: 1.00
Los by Move: A
ApproachDel:
Delay Adj: 1.00
ApprAdjDel:
Los by Appr:

Initial Vol: 0
Lanes: 0
Signal=Stop Rights=Includ
Vol Cnt Date: n/a
Cycle Time (sec): 1
Loss Time (sec): 0
Critical V/C: 1
Avg Crit Del (sec/veh): 1
Avg Delay (sec/veh): 1
LOS: B

Approach: South Bound
Movement: L - T - R
Min. Green: 7
Volume Module:
Base Vol: 19
Growth Adj: 1.18
Initial Bee: 22
Added Vol: 0
Approved Pr: 32
Initial Fut: 66
User Adj: 1.00
PHF Adj: 1.00
PHF Volume: 66
Reduc Vol: 0
Reduced Vol: 66
PCE Adj: 1.00
MLF Adj: 1.00
Final Vol.: 66
Saturation Flow Module:
Adjustment: 1.00
Lanes: 0.65
Final Sat.: 381
Capacity Analysis Module:
Crit Moves: *****
Delay/Veh: 10.1
Adel/Veh: 1.00
Los by Move: B
ApproachDel:
Delay Adj: 1.00
ApprAdjDel:
Los by Appr:

Initial Vol: 0
Lanes: 0
Signal=Stop Rights=Includ
Vol Cnt Date: n/a
Cycle Time (sec): 1
Loss Time (sec): 0
Critical V/C: 1
Avg Crit Del (sec/veh): 1
Avg Delay (sec/veh): 1
LOS: B

Approach: East Bound
Movement: L - T - R
Min. Green: 7
Volume Module:
Base Vol: 19
Growth Adj: 1.18
Initial Bee: 22
Added Vol: 0
Approved Pr: 32
Initial Fut: 66
User Adj: 1.00
PHF Adj: 1.00
PHF Volume: 66
Reduc Vol: 0
Reduced Vol: 66
PCE Adj: 1.00
MLF Adj: 1.00
Final Vol.: 66
Saturation Flow Module:
Adjustment: 1.00
Lanes: 0.65
Final Sat.: 381
Capacity Analysis Module:
Crit Moves: *****
Delay/Veh: 10.1
Adel/Veh: 1.00
Los by Move: B
ApproachDel:
Delay Adj: 1.00
ApprAdjDel:
Los by Appr:

Initial Vol: 0
Lanes: 0
Signal=Stop Rights=Includ
Vol Cnt Date: n/a
Cycle Time (sec): 1
Loss Time (sec): 0
Critical V/C: 1
Avg Crit Del (sec/veh): 1
Avg Delay (sec/veh): 1
LOS: B

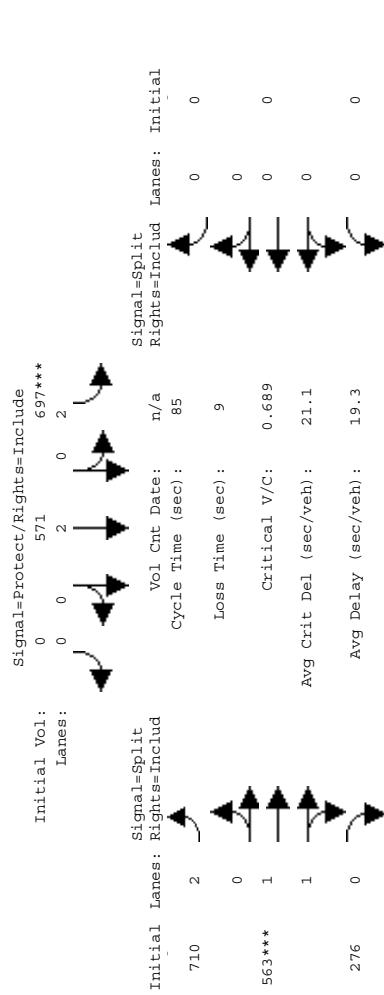
Approach: West Bound
Movement: L - T - R
Min. Green: 7
Volume Module:
Base Vol: 19
Growth Adj: 1.18
Initial Bee: 22
Added Vol: 0
Approved Pr: 32
Initial Fut: 66
User Adj: 1.00
PHF Adj: 1.00
PHF Volume: 66
Reduc Vol: 0
Reduced Vol: 66
PCE Adj: 1.00
MLF Adj: 1.00
Final Vol.: 66
Saturation Flow Module:
Adjustment: 1.00
Lanes: 0.65
Final Sat.: 381
Capacity Analysis Module:
Crit Moves: *****
Delay/Veh: 10.1
Adel/Veh: 1.00
Los by Move: B
ApproachDel:
Delay Adj: 1.00
ApprAdjDel:
Los by Appr:

Level of Service Computation Report
1997 HCM 4-Way Stop (Future Volume Alternative)
AM 2013 Project Alt. 3

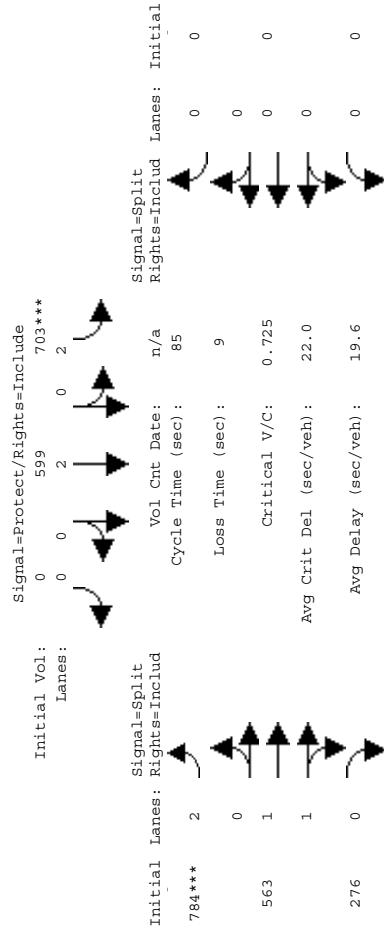
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 3

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 3



Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	0 10 10	7 10 0	7 10 0	0 0 0
Volume Module:				
Base Vol:	0 746	176	417 428	0
Growth Adj:	1.18 1.18	1.18	1.18 1.18	1.18
Initial Bce:	0 883	208	494 507	0
Added Vol:	0 64	0	64 0	0
Approved Pr:	0 157	86	203 58	0
Initial Fut:	0 1104	294	697 571	0
User Adj:	1.00 1.00	1.00	1.00 1.00	1.00
PHF Adj:	1.00 1.00	1.00	1.00 1.00	1.00
PHF Volume:	0 1104	294	697 571	0
Reduc Vol:	0 0	0	0 0	0
Reduced Vol:	0 1104	294	697 571	0
PCE Adj:	1.00 1.00	1.00	1.00 1.00	1.00
MLF Adj:	1.00 1.00	1.00	1.00 1.00	1.00
Final Vol.:	0 1104	294	697 571	0
Saturation Flow Module:				
Sat/Lane:	1800 1800	1800 1800	1800 1800	1800 1800
Adjustment:	0.971.06	0.97	0.881.06	0.971.06
Lanes:	0.00 4.00	1.00	2.00 2.00	0.00 0.00
Final Sat.:	0 7600	1750	3150 3800	0
Capacity Analysis Module:				
Vol/Sat:	0.00 0.15	0.17	0.22 0.15	0.00 0.00
Crit Moves:	****	****	0.23 0.23	0.00 0.00
Green Time:	0.0 20.7	27.3 48.0	0.0 28.0	0.0 0.0
Volume/Cap:	0.00 0.60	0.69	0.68 0.27	0.00 0.00
Delay/Veh:	0.0 22.0	25.4	20.5 7.2	0.0 0.0
ProgAdjFcrt:	1.00 1.00	1.00	1.00 1.00	1.00 1.00
AddDel/Veh:	0.0 22.0	25.4	20.5 7.2	0.0 0.0
Desgnqueue:	0 41	11	23 12	0 0



Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	0 10 10	7 10 0	7 10 0	0 0 0
Volume Module:				
Base Vol:	0 746	176	417 428	0
Growth Adj:	1.18 1.18	1.18	1.18 1.18	1.18
Initial Bce:	0 883	208	494 507	0
Added Vol:	0 64	0	64 0	0
Approved Pr:	0 157	86	203 58	0
Initial Fut:	0 1104	294	697 571	0
User Adj:	1.00 1.00	1.00	1.00 1.00	1.00
PHF Adj:	1.00 1.00	1.00	1.00 1.00	1.00
PHF Volume:	0 1104	294	697 571	0
Reduc Vol:	0 0	0	0 0	0
Reduced Vol:	0 1104	294	697 571	0
PCE Adj:	1.00 1.00	1.00	1.00 1.00	1.00
MLF Adj:	1.00 1.00	1.00	1.00 1.00	1.00
Final Vol.:	0 1104	294	697 571	0
Saturation Flow Module:				
Sat/Lane:	1800 1800	1800 1800	1800 1800	1800 1800
Adjustment:	0.971.06	0.97	0.881.06	0.971.06
Lanes:	0.00 4.00	1.00	2.00 2.00	0.00 0.00
Final Sat.:	0 7600	1750	3150 3800	0
Capacity Analysis Module:				
Vol/Sat:	0.00 0.16	0.17	0.22 0.15	0.00 0.00
Crit Moves:	****	****	0.23 0.23	0.00 0.00
Green Time:	0.0 20.6	26.2 46.8	0.0 28.0	0.0 0.0
Volume/Cap:	0.00 0.64	0.72	0.72 0.29	0.00 0.00
Delay/Veh:	0.0 22.5	26.6	21.8 7.8	0.0 0.0
Delay Adj:	1.00 1.00	1.00	1.00 1.00	1.00 1.00
ProgAdjFcrt:	1.00 1.00	1.00	1.00 1.00	1.00 1.00
AddDel/Veh:	0.0 22.5	26.6	21.8 7.8	0.0 0.0
Desgnqueue:	0 44	12	24 13	0 0

**Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM Peak**

Level Of Service Computation Report
HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1

	Lanes:	0	0	0	0	0	0	
Initial Vol.:	0	0	0	0	0	0		
Signal=Split/Rights=Include								
Approach:	North Bound	South Bound	East Bound	West Bound				
Movement:	$L - T - R$							
Min. Green:	0	0	10	0	10	7	10	
Volume Module:								
Base Vol.	0	0	19	0	24	381	64	
Growth Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Initial Bse:	0	0	19	0	24	381	64	
Added Vol.:	0	0	0	0	0	0	0	
PasserByVol.:	0	0	0	0	0	0	0	
Initial Put:	0	0	19	0	24	381	64	
User Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHF Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHF Reduct Vol.:	0	0	19	0	24	381	64	
Reduced Vol.:	0	0	0	0	0	0	0	
Reduced Vol.:	0	0	19	0	24	381	64	
PCB Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
MLF Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Final Vol.:	0	0	19	0	24	381	64	
Saturation Flow Module:								
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	
Adjustment:	0.97	1.06	0.97	1.06	0.97	1.06	0.97	
Lanes:	0.00	0.00	0.00	1.00	1.00	1.00	0.00	
Final Sat.:	0	0	0	1750	0	1750	1900	

Level Of Service Computation Report
HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1

Figure 1 consists of two rows of four traffic signal timing diagrams each. The top row is labeled "Signal=Split/Rights=Include" and the bottom row is labeled "Signal=Protect". Each diagram shows a sequence of four phases: Red, Yellow, Green, and Red. The x-axis for all diagrams is "Time (sec)" ranging from 0 to 22. The y-axis for the left column is "Lane" (1 or 2), and for the right column is "Lane" (1 or 2). Arrows indicate vehicle movement direction.

Row	Column	Diagram Description	Initial Vol:	Lanes:	Vol Cnt	Date:	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):
Top Row (Signal=Split/Rights=Include)	1	Red (0-2), Yellow (2-3), Lane 1 Green (3-4), Lane 2 Green (3-4), Red (4-22)	28	1 0	0 0	n/a	60	9	0.366	9.2	7.1
	2	Red (0-2), Yellow (2-3), Lane 2 Green (3-4), Lane 1 Green (3-4), Red (4-22)	22***	0 1	0 1	77***				0	0
Bottom Row (Signal=Protect)	1	Red (0-2), Yellow (2-3), Lane 1 Green (3-4), Lane 2 Green (3-4), Red (4-22)	451***	1	0 1					0	0
	2	Red (0-2), Yellow (2-3), Lane 2 Green (3-4), Lane 1 Green (3-4), Red (4-22)	311	1	1 0					0	0

	Lanes:	0	0	0	0	0	0
	Initial Vol.:	0	0	0	0	0	0
Signal=Split/Rights=Include							
Approach:	North Bound	South Bound	East Bound	West Bound			
Movement:	L - T - R	L - T - R	L - T - R	L - T - R			
Min. Green:	0 0	0 10	0 10	0 10	0 10	0 10	0 10
Volume Module:	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
Base Vol.:	0 0	0 19	0 24	381 64	0 0	0 27	0 0
Growth Adj.:	1.18 1.18 1.18 1.18 1.18 1.18 1.18	1.18 1.18 1.18 1.18 1.18 1.18 1.18	1.18 1.18 1.18 1.18 1.18 1.18 1.18	1.18 1.18 1.18 1.18 1.18 1.18 1.18	1.18 1.18 1.18 1.18 1.18 1.18 1.18	1.18 1.18 1.18 1.18 1.18 1.18 1.18	1.18 1.18 1.18 1.18 1.18 1.18 1.18
Initial Bee:	0 0	0 22	0 28	451 76	0 0	0 32	0 0
Added Vol.:	0 0	0 0	0 0	0 1	0 0	0 13	0 0
Approved Pr:	0 0	0 0	0 0	0 234	0 0	0 32	0 0
Initial Fut:	0 0	0 22	0 28	451 311	0 0	0 77	0 0
User Adj.:	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj.:	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:	0 0	0 22	0 28	451 311	0 0	0 77	0 0
Reducut Vol.:	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Reducuted Vol.:	0 0	0 22	0 28	451 311	0 0	0 77	0 0
PCE Adj.:	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj.:	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.:	0 0	0 22	0 28	451 311	0 0	0 77	0 0
Saturation Flow Module:							
Sat/Lane:	1800 1800 1800 1800 1800 1800 1800	1800 1800 1800 1800 1800 1800 1800	1800 1800 1800 1800 1800 1800 1800	1800 1800 1800 1800 1800 1800 1800	1800 1800 1800 1800 1800 1800 1800	1800 1800 1800 1800 1800 1800 1800	1800 1800 1800 1800 1800 1800 1800
Adjustment:	0.97 1.06 0.97 1.06 0.97 1.06 0.97	0.97 1.06 0.97 1.06 0.97 1.06 0.97	0.97 1.06 0.97 1.06 0.97 1.06 0.97	0.97 1.06 0.97 1.06 0.97 1.06 0.97	0.97 1.06 0.97 1.06 0.97 1.06 0.97	0.97 1.06 0.97 1.06 0.97 1.06 0.97	0.97 1.06 0.97 1.06 0.97 1.06 0.97
Lanes:	0.00 0.00 1.00 0.00 1.00 0.00 1.00	1.00 1.00 0.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Sat.:	0 0	0 1750	0 1750	1750 1750 1900	0 0	0 1900	0 1900 1750

Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.01	0.00	0.02	0.26	0.16	0.00	0.00	0.04	0.00
Crit Moves:				*****							****	
Green Time:	0.0	0.0	0.0	10.0	0.0	10.0	31.0	41.0	0.0	0.0	10.0	0.0
Volume/Cap:	0.00	0.00	0.00	0.08	0.00	0.10	0.50	0.24	0.00	0.00	0.24	0.00
Delay/Veh:	0.0	0.0	0.0	16.0	0.0	16.1	7.6	2.8	0.0	0.0	16.6	0.0
ProgAdjFCr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	16.0	0.0	16.1	7.6	2.8	0.0	0.0	16.6	0.0
AdjDel/Veh:	0.0	0.0	0.0	1	0	1	1	3	0.0	0.0	2	

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Figure 1 consists of five diagrams illustrating traffic flow at a signalized intersection. The top diagram shows the initial state with 1195 vehicles. Subsequent diagrams show the progression of vehicles through the intersection, with arrows indicating movement and vehicle counts decreasing over time.

Diagram	Initial Vol:	Lanes:	Signal=:	Lanes: Rights=:	Vol Cnt Date:	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):	
1 ***	1195	0	Protect/Rights=Include	2949	2	n/a	110	9	1.173	116.4	100.5
2	1195	0	148***	2949	1	148***	110	9	1.173	116.4	100.5
3	1195	0		2949	0		110	9	1.173	116.4	100.5
4	1195	0		2949	0		110	9	1.173	116.4	100.5
5	1195	0		2949	1		110	9	1.173	116.4	100.5

```

Lanes : 0 0 5 0 1
Initial Vol.: 0 3771**** 39
Signal=Protect/Rights=Ignore

```

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 5 HCM Operations (Future Volume Alternative)
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Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
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Figure 1 consists of five diagrams illustrating traffic flow at a signalized intersection. The top diagram shows the initial state with 1195 vehicles. The subsequent diagrams show the progression of vehicles through the intersection, with arrows indicating movement and signal phases. The bottom diagram shows the final state with 1484 vehicles.

```

Lanes : 0 0 5 0 1
Initial Vol.: 0 3771**** 39
Signal=Protect/Rights=Ignore

```

delay Veh:	0.0	0.0	181.4	18.6	0.0	112.6	113	10.9	0.0	0.0
delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
delay adjJctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
adjJdstn:	0.0	0.0	181.4	18.6	0.0	112.6	113	10.9	0.0	0.0
adjsameone:	0	170	0	9	46	0	103	0	4	0

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Figure 1 consists of five diagrams illustrating traffic flow at a signalized intersection. Each diagram includes the following information:

- Initial Vol:** The total number of vehicles entering the intersection.
- Lanes:** The number of lanes available for each vehicle.
- Signal=:** The signal setting for the current time step.
- Rights=:** The signal setting for the next time step.
- Vol Cnt Date:** The volume count for the current date.
- Cycle Time (sec):** The cycle time in seconds.
- Loss Time (sec):** The loss time in seconds.
- Critical V/C:** The critical vehicle count.
- Avg Crit Del (sec/veh):** The average critical delay per vehicle.
- Avg Delay (sec/veh):** The average delay per vehicle.

The progression of vehicles is as follows:

- Step 1:** Initial Vol: 125, Lanes: 1, Signal=Protect/Rights=Include, Rights=sec. Loss Time: 9, Critical V/C: 1.173, Avg Crit Del: 116.4, Avg Delay: 100.5.
- Step 2:** Initial Vol: 2949, Lanes: 2, Signal=Split, Rights=Overla. Loss Time: 2, Critical V/C: 1.173, Avg Crit Del: 116.4, Avg Delay: 100.5.
- Step 3:** Initial Vol: 2949, Lanes: 1, Signal=Split, Rights=Overla. Loss Time: 1, Critical V/C: 1.173, Avg Crit Del: 116.4, Avg Delay: 100.5.
- Step 4:** Initial Vol: 2949, Lanes: 1, Signal=Split, Rights=Overla. Loss Time: 0, Critical V/C: 1.173, Avg Crit Del: 116.4, Avg Delay: 100.5.
- Step 5:** Initial Vol: 125, Lanes: 1, Signal=Protect/Rights=Include, Rights=sec. Loss Time: 0, Critical V/C: 1.173, Avg Crit Del: 116.4, Avg Delay: 100.5.

```

Lanes : 0 0 5 0 1
Initial Vol.: 0 3771**** 39
Signal=Protect/Rights=Ignore

```

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 5 HCM Operations (Future Volume Alternative)
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Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
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Figure 1 consists of five diagrams illustrating traffic flow at a signalized intersection. The top diagram shows the initial state with 1195 vehicles. The subsequent diagrams show the progression of vehicles through the intersection, with arrows indicating movement and signal phases. The bottom diagram shows the final state with 1484 vehicles.

```

Lanes : 0 0 5 0 1
Initial Vol.: 0 3771**** 39
Signal=Protect/Rights=Ignore

```

Level Of Service Computation Report
 5 HCM Operations (Future Volume Alternative)
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Figure 1 consists of five diagrams illustrating traffic flow at a signalized intersection. The top diagram shows the initial state with 1195 vehicles. The subsequent diagrams show the progression of vehicles through the intersection, with arrows indicating movement and signal phases. The bottom diagram shows the final state with 1484 vehicles.

```

Lanes : 0 0 5 0 1
Initial Vol.: 0 3771**** 39
Signal=Protect/Rights=Ignore

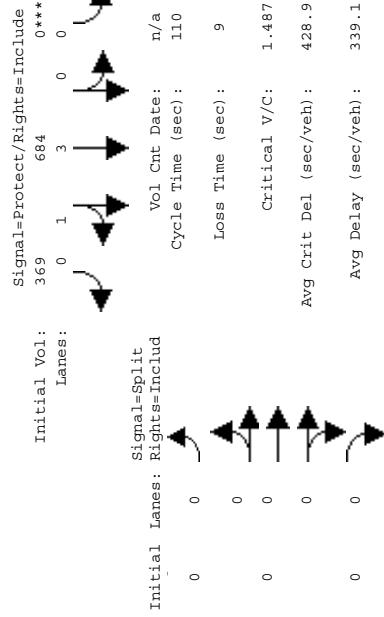
```

	delay Veh:	delay Adj:	delay Adjctr:	delay AdjDel:	delay AdjVeh:	destconnenc:
0.0	0.0	1.00	0.0	1.00	1.00	0.0
1.00	1.00	1.00	1.00	1.00	1.00	1.00
1.17	0.0	1.00	0.0	1.00	1.00	1.00
1.70	0	0	0	0	0	0

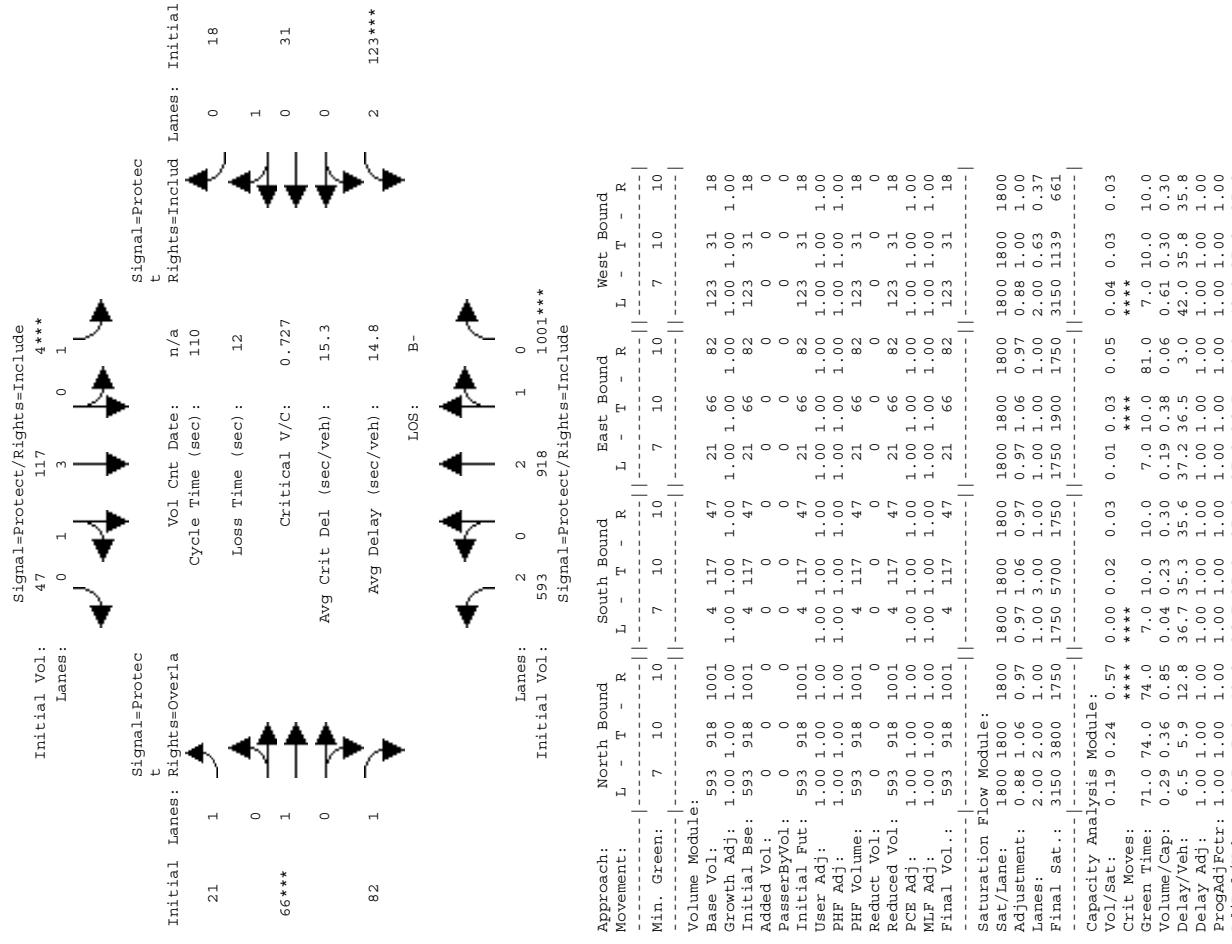
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1985 HCM Operations (Future Volume Alternative)
AM Peak

Intersection #17: 237 WB Ramps/Mathilda



Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	7 10	0 0	10 0	0 0
Volume Module:	183 2196	0 0	295 64	0 0
Base Vol:	1.18 1.18	1.18 1.18	1.18 1.18	1.18 1.18
Growth Adj:	217 2600	0 0	349 76	0 0
Initial Bee:	0 143	0 0	27 17	0 0
Added Vol:	11 3824	0 0	276 0	0 0
Approved Pr:	228 6567	0 0	684 369	0 0
Initial Fut:	228 6567	0 0	684 369	0 0
User Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Volume:	228 6567	0 0	684 369	0 0
Reduc Vol:	0 0	0 0	0 0	0 0
Reduced Vol:	0 0	0 0	0 0	0 0
PCE Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
MLF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
Final Vol.:	228 6567	0 0	684 369	0 0
Saturation Flow Module:	1800 1800	1800 1800	1800 1800	1800 1800
Adj/Lane:	0.97 1.06	0.97 1.06	0.97 1.06	0.97 1.06
Vol/Sat:	0.13 0.86	0.00 0.12	0.21 0.00	0.00 0.24
Crit Moves:	*****	*****	*****	*****
Green Time:	24.4 63.9	39.5 0.0	0.0 37.1	37.1 37.1
Volume/Cap:	0.59 1.49	0.00 0.33	0.59 0.00	0.00 0.70
Delay/Veh:	30.8 429	0 0	19.5 22.1	0.0 0.0
ProgAdjFcrt:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
AdjDel/Veh:	30.8 429	0.0 0.0	19.5 22.1	0.0 0.0
DesignQueue:	11 218	0 0	28 15	0 0



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 985 HCM Operations (Future Volume Alternative)
 AM 2013 Project Alt. 3

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Initial Vol:

Lanes:	56	0	1	653	3	0	1	44***
--------	----	---	---	-----	---	---	---	-------

Signal=Protect/Rights-Include

Initial Lanes:

Lanes:	1	2	3	4
--------	---	---	---	---

Signal=Protect

Initial Lanes: Rights=Overla

Lanes:	1	2	3	4
--------	---	---	---	---

Initial Vol:

Lanes:	25***	78	0	1	1	0	1	1
--------	-------	----	---	---	---	---	---	---

Signal=Protect

Initial Lanes: Rights=Includ

Lanes:	1	2	3	4
--------	---	---	---	---

Initial Vol:

Lanes:	143	0	1	1	0	1	1	2
--------	-----	---	---	---	---	---	---	---

Signal=Protect

Initial Lanes: Rights=Includ

Lanes:	0	1	1	1	0	1	1	2
--------	---	---	---	---	---	---	---	---

	Lanes:	2	0	2	1	0	
Initial Vol:	1212	483***	1	1363			Signal=Protect/Rights-Include
Approach:	North Bound	South Bound	East Bound	West Bound			
Movement:	L - T - R	L - T - R	L - T - R	L - T - R			
Win. Green:	7 10	10	7 10	10	7 10	10	7 10
Volume Module:							
Base Vol:	593	918	1001	4 117	47	21	66
Base Flow Adj:	1.18	1.18	1.18	1.18	1.18	1.18	1.18
Initial Base:	702	1087	1185	1.5	139	56	25
Approved Vol:	13	37	0	0	0	0	0
Approved Pr:	497	3748	178	39	514	0	0
Initial Flow:	1212	4435	1363	4.4	653	56	25
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HF/HF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HF Volume:	1212	4435	1363	4.4	653	56	25
Reduced Vol:	0	0	0	0	0	0	0
Reduced Flow:	1212	4435	1363	4.4	653	56	25
MLIF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol:	1212	4435	1363	4.4	653	56	25
Saturation Flow Module:							
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800
Adj/Adjustment:	0.88	1.05	1.00	0.97	1.05	1.00	0.97
Lanes:	2.00	2.32	0.68	1.00	3.67	0.33	1.00
Final Sat.:	3150	4367	1231	1750	6907	592	1750

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The figure displays two sets of signal timing diagrams for a four-lane intersection. The top set, labeled "Signal=Protect/Rights=Include", shows a sequence of green, yellow, and red phases for each lane. The bottom set, labeled "Signal=Protect/Rights=Overlap", shows a more complex sequence where multiple lanes change phases simultaneously. Arrows indicate the direction of traffic flow.

Phase	Lanes (Top)	Lanes (Bottom)	Vol Cnt (sec)	Cycle Time (sec)	Date	Loss Time (sec)	Critical V/C	Avg Crit Del (sec/veh)	Avg Delay (sec/veh)
Initial	56 Lanes: 0 1 3 0 1	25*** Initial Lanes: Rights=Overlap	n/a	11.0				938317.8	695420.4
1	691 0 1 3 0 1	78 0 1 0 0 1	1.540	12			1	0	313
2	44*** 0 1 3 0 1	148 1 0 0 0 2	37***			0	0	0	169

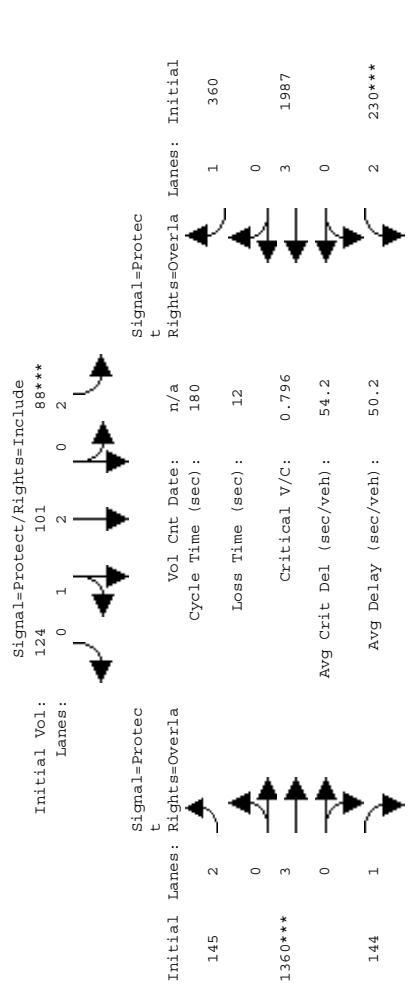
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10	7	10	10	
Volume Module:	593	918	1001	4	117	47	21	66	82	123	31	18	118	118	118	
Base Vol:	593	918	1001	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	
Initial Adj:	702	1087	1185	5	139	56	25	78	97	146	37	21				
Initial Bse:	30	171	0	38	0	0	0	0	0	0	0	0	0	0	0	
Added Vol:	497	3748	178	39	514	0	0	0	0	45	23	0	292			
Approved Pr:	1229	5006	1363	44	691	56	25	78	148	169	37	313				
Initial Fut:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHP Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHP Volume:	1229	5006	1363	44	691	56	25	78	148	169	37	313				
Reducut. Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	1229	5006	1363	44	691	56	25	78	148	169	37	313				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Final Vol.:	1229	5006	1363	44	691	56	25	78	148	169	37	313				
<hr/>																
Saturation Flow Module:																
Sat/Lane:	180	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	
Adjustment:	0.88	1.05	1.05	0.97	1.05	1.00	0.97	1.06	1.00	0.97	1.06	0.97	0.88	1.00	1.00	
Lanes:	2.00	2.33	0.67	1.00	3.69	0.31	1.00	1.00	1.00	1.00	1.00	1.00	2.00	0.11	1.00	
Final Sat.:	3150	4400	1198	1750	6937	562	1750	1900	1750	1900	1750	1900	3150	190	1610	

Capacity Analysis Module:									
Vol/Sat:	0.39	1.14	1.14	0.03	0.10	0.10	0.01	0.04	0.08
Crit/Moves:	***	***	***	***	***	***	***	***	0.19
Green/Time:	0.68	7.17	7.17	0.70	1.60	7.0	11.3	74.1	7.9
Volume/Cap:	0.68	1.74	1.74	0.40	0.68	0.22	0.40	0.13	12.3
Delay/Veh:	13.4	xxxxx	xxxxx	38.8	35.1	35.1	37.4	35.8	0.74
Delay/Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.74
PregAdj/Fctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adel/Delay:	13.4	xxxxx	xxxxx	38.8	35.1	35.1	37.4	35.8	871.4
Desim/OnBeh:	35	15.25	40	3	37	3	1	4.9	2

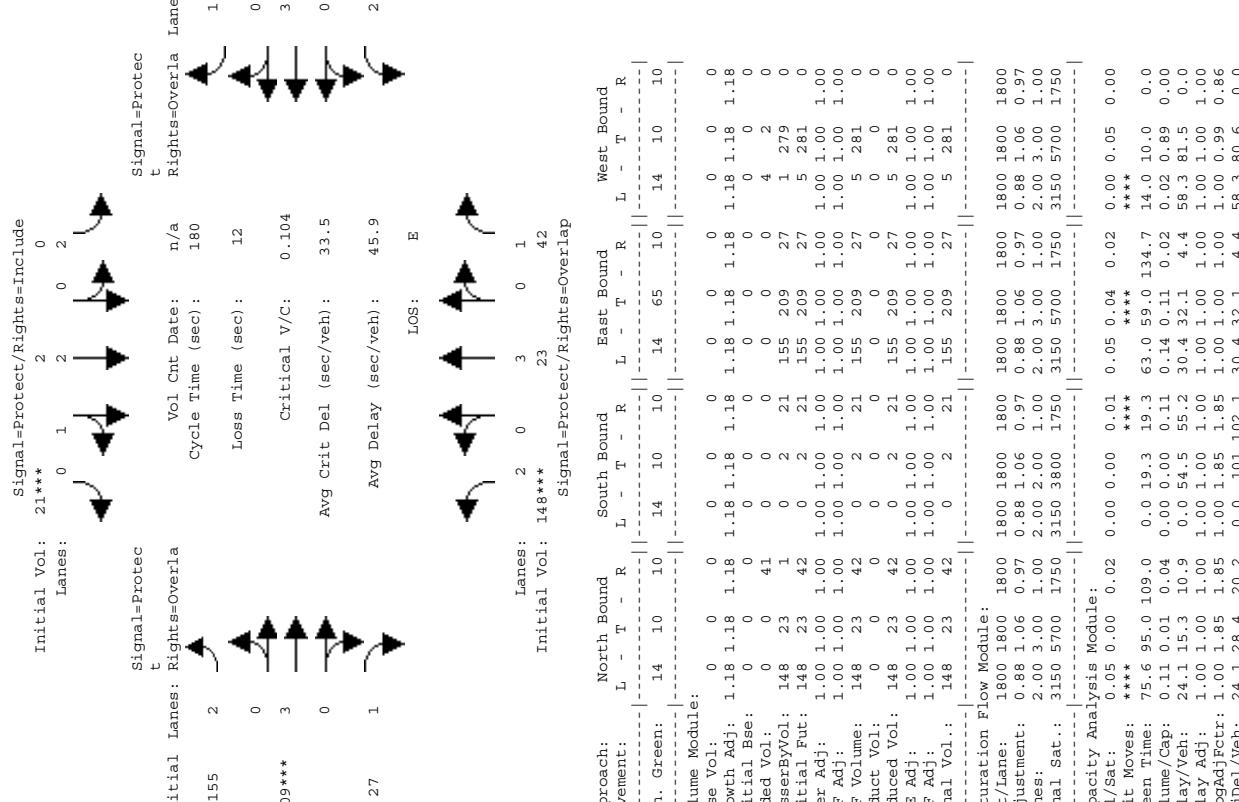
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Intersection #19: Central/Mary
Intersection #19: Central/Mary
Level Of Service Computation Report
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1985 HCM Operations (Future Volume Alternative)

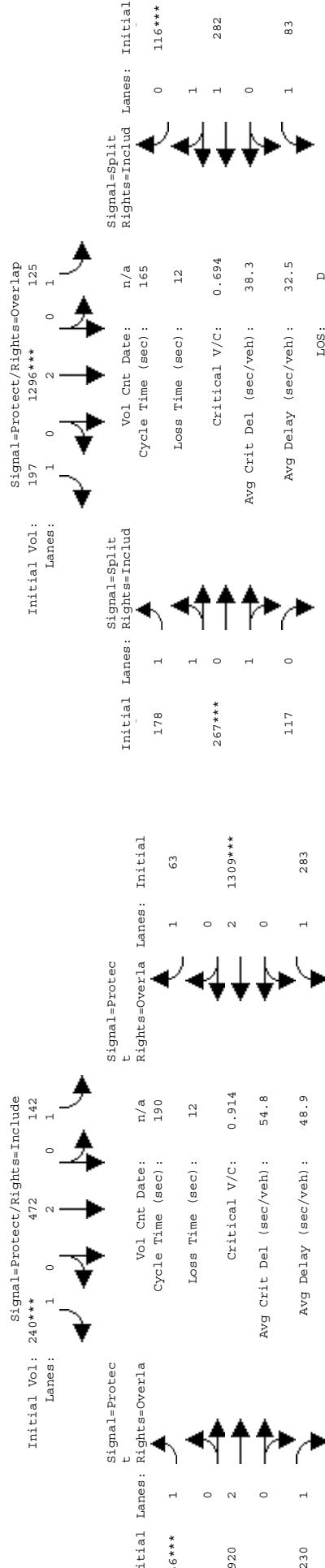


Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	14 10 10	14 10 10	14 10 10	14 10 10
Volume Module:				
Base Vol:	745 544 834	88 101 124	145 1360 144	230 1987 360
Growth Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Bee:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Added Vol:	0 0 0	0 0 0	0 0 0	0 0 0
PassesByVol:	0 0 0	0 0 0	0 0 0	0 0 0
Initial Fut:	745 544 834	88 101 124	145 1360 144	230 1987 360
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Volume:	745 544 834	88 101 124	145 1360 144	230 1987 360
Reduced Vol:	0 0 0	0 0 0	0 0 0	0 0 0
Reduced Vol:	745 544 834	88 101 124	145 1360 144	230 1987 360
PCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
MLF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Vol.:	745 544 834	88 101 124	145 1360 144	230 1987 360
Saturation Flow Module:				
Sat/Lane:	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800
Lanes:	2.00 3.00 1.00	2.00 2.00 1.00	2.00 3.00 1.00	2.00 3.00 1.00
Final Sat.:	3150 3800 1750	3150 5700 1750	3150 5700 1750	3150 5700 1750
Capacity Analysis Module:				
Vol/Sat:	0.24 0.10 0.48	0.03 0.03 0.07	0.05 0.24 0.08	0.07 0.35 0.21
Crit. Moves:	*****	*****	*****	*****
Green Time:	68.5 75.0	89.0 14.0 20.5	20.5 14.0 65.0	79.0
Volume/Cap:	0.62 0.23	0.96 0.36 0.23	0.62 0.59 0.66	0.11 0.94 0.97
Delay/Veh:	24.1 25.7	49.8 60.2 55.2	60.1 63.7 52.3	27.5
Delay Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
ProgAdjFcrr:	1.00 1.85	1.42 1.00 1.85	1.81 1.00 1.00	1.85 1.00 1.00
AddJl/Veh:	24.1 47.6	70.6 60.2 102.9	63.7 57.0 92.3	23.6
DesignQueue:	49 33	48 8 9	11 14 93	22 140 21



Level Of Service Computation Report
HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 3

Level Of Service Computation Report
 985 HCM Operations (Future Volume Alternative)
 PM Peak

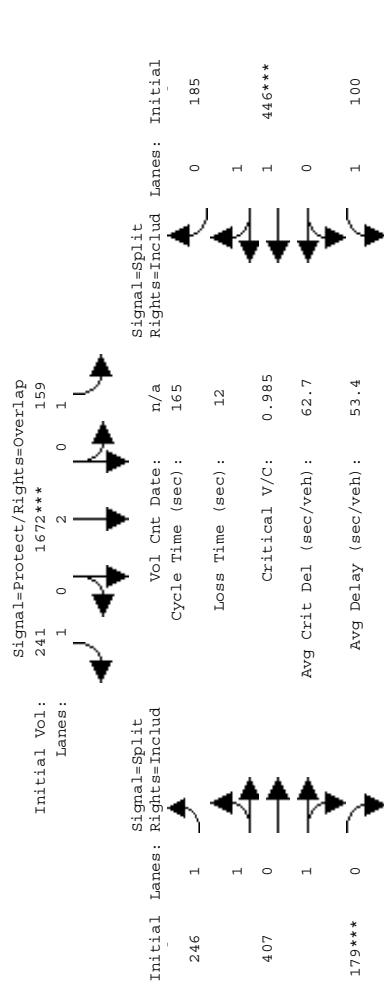


Initial Vol.: 346*** 1053 117											
Signal=Protect/Rights=Overlap											
Lanes: 1 0 2 0 1											
Approach: North Bound South Bound East Bound West Bound											
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	West Bound
Min. Green:	7 10 10	7 10 10	7 10 10	7 10 10	7 10 10	7 10 10	7 10 10	7 10 10	7 10 10	7 10 10	7 10 10
Volume Module:	292 697 83	121 360 202	191 743 181	236 1019 54	125 1296 197	178 267 117	83 282 116				
Base Vol.:	292 697 83	121 360 202	191 743 181	236 1019 54	125 1296 197	178 267 117	83 282 116				
Growth Adj.:	1.17 1.17 1.17	1.17 1.17 1.17	1.17 1.17 1.17	1.17 1.17 1.17	1.17 1.17 1.17	1.17 1.17 1.17	1.17 1.17 1.17	1.17 1.17 1.17	1.17 1.17 1.17	1.17 1.17 1.17	
Initial Bse.:	342 817 97	142 422 237	224 871 212	277 1194 63	159 1257 74	159 1257 74	159 1257 74	159 1257 74	159 1257 74	159 1257 74	
Added Vol.:	0 50 0	11 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	
Approved Pr.:	4 186 20	0 39 3	12 49 18	6 115 0	125 1296 197	178 267 117	83 282 116				
Initial Fut.:	346 1053 117	142 472 240	236 920 230	283 1309 63	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
User Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
PHF Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
PHF Volume:	346 1053 117	142 472 240	236 920 230	283 1309 63	125 1296 197	178 267 117	83 282 116				
Reduc. Vol.:	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	
Reduced Vol.:	346 1053 117	142 472 240	236 920 230	283 1309 63	125 1296 197	178 267 117	83 282 116				
PCE Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
MLF Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
Final Vol.:	346 1053 117	142 472 240	236 920 230	283 1309 63	125 1296 197	178 267 117	83 282 116				
Saturation Flow Module:											
Sat/Lane:	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800	
Adjustment:	0.97 1.06	0.97 1.06	0.97 1.06	0.97 1.06	0.97 1.06	0.97 1.06	0.97 1.06	0.97 1.06	0.97 1.06	0.97 1.06	
Lanes:	1.00 2.00	1.00 2.00	1.00 2.00	1.00 2.00	1.00 2.00	1.00 2.00	1.00 2.00	1.00 2.00	1.00 2.00	1.00 2.00	
Final Sat.:	1762 3800 1487	1662 3800 1487	1662 3800 1487	1662 3800 1487	1750 3800 1750	1750 3800 1750	1750 3800 1750	1750 3800 1750	1750 3800 1750	1750 3800 1750	1750 3800 1750
Capacity Analysis Module:											
Vol/Sat:	0.21 0.28 0.08	0.09 0.12	0.16 0.14 0.15	0.17 0.34 0.04	0.07 0.34 0.04	0.11 0.10 0.10	0.11 0.10 0.10	0.11 0.10 0.10	0.11 0.10 0.10	0.11 0.10 0.10	0.11 0.10 0.10
Crit Moves:	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Green Time:	43.3 58.7	18.1 33.6	33.6 59.4	102.7	41.8 71.6	89.7	24.7	24.7	24.7	24.7	25.6
Volume/Cap:	0.91 0.90	0.25 0.70	0.90 0.70	0.83 0.60	0.91 0.91	0.72 0.91	0.65 0.69	0.65 0.69	0.65 0.69	0.65 0.69	0.69 0.69
Delay/Veh:	72.9 54.3	37.5	94.5 58.2	82.2 47.3	18.1	59.8 49.5	21.0	15.1 52.4	15.1 52.4	15.1 52.4	52.4 52.7
Delay Adj.:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
ProgAdj/Fctr:	1.00 0.85	1.00 0.85	1.00 0.85	1.00 0.85	1.00 0.85	1.00 0.85	1.00 0.85	1.00 0.85	1.00 0.85	1.00 0.85	1.00 1.00
AdjJel/Veh:	72.9 46.2	31.8	94.5 49.5	69.8 84.1	15.4	59.8 42.0	17.8	52.1 52.4	52.1 52.4	52.1 52.4	47.2 52.7
DesignQueue:	13	62	2	10	66	7	14	21	21	21	9

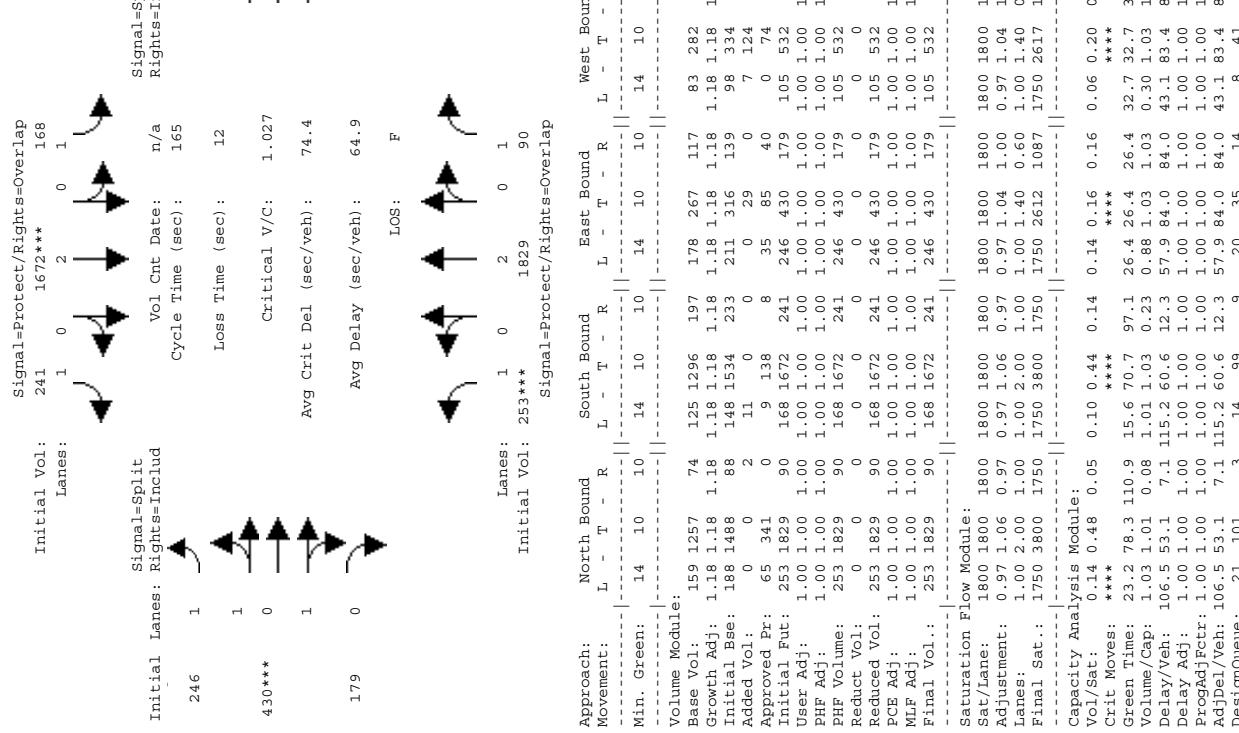
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 3

Intersection #2: Moffett/Central Expressway



Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	14 10 10 14 10 10 14 10 10 10	14 10 10 14 10 10 14 10 10 10	14 10 10 14 10 10 14 10 10 10	14 10 10 14 10 10 14 10 10 10
Volume Module:				
Base Vol:	159 1257 74	125 1296 197	178 267 117	83 282 116
Growth Adj:	1.18 1.18 1.18	1.18 1.18 1.18	1.18 1.18 1.18	1.18 1.18 1.18
Initial Bce:	188 1488 88	148 1554 233	211 313 98	334 98 137
Added Vol:	0 0 2	0 0 0	0 2 38	15 50
Approved Pr:	65 341 0	9 138 8	35 85 40	74 33
Initial Fct:	253 1829 88	159 1672 241	246 407 179	100 446 195
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Volume:	253 1829 88	159 1672 241	246 407 179	100 446 185
Reducit Vol:	0 0 0	0 0 0	0 0 0	0 0 0
Reduced Vol:	253 1829 88	159 1672 241	246 407 179	100 446 185
PCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
MLF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Vol.:	253 1829 88	159 1672 241	246 407 179	100 446 185
Saturation Flow Module:				
Sat/Lane:	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800
Adjustment:	0.971.06 0.97	0.971.06 0.97	0.971.04 1.00	0.971.04 1.00
Lanes:	1.00 2.00 1.00	1.00 2.00 1.00	1.00 1.40 0.60	1.00 1.40 0.60
Final Sat.:	1750 3800 1750	1750 3800 1750	1750 2569 1130	1750 2612 1087
Capacity Analysis Module:				
Vol/Sat:	0.14 0.48 0.05	0.09 0.44 0.14	0.14 0.16 0.16	0.06 0.17 0.17
Crit Moves:	*****	*****	*****	*****
Green Time:	24.2 82.4 110.9	15.5 73.7 100.0	26.5 26.5 26.5	28.6 28.6 28.6
Volume/Cap:	0.99 0.96 0.07	0.96 0.99 0.23	0.87 0.99 0.99	0.33 0.99 0.99
Delay/Veh:	92.6 40.2 7.1	100.4 48.2 11.2	57.8 73.1 45.7	75.7 115.2 60.6
ProgAdjFctr:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
AddDel/Veh:	92.6 40.2 7.1	100.4 48.2 11.2	57.8 73.1 45.7	75.7 115.2 60.6
DesInqueue:	21 96 3	13 13 9	20 33 14	8 35 15



Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	14 10 10 14 10 10 14 10 10 10	14 10 10 14 10 10 14 10 10 10	14 10 10 14 10 10 14 10 10 10	14 10 10 14 10 10 14 10 10 10
Volume Module:				
Base Vol:	159 1257 74	125 1296 197	178 267 117	83 282 116
Growth Adj:	1.18 1.18 1.18	1.18 1.18 1.18	1.18 1.18 1.18	1.18 1.18 1.18
Initial Bce:	188 1488 88	148 1554 233	211 313 98	334 98 137
Added Vol:	0 0 2	0 0 0	0 2 38	15 50
Approved Pr:	65 341 0	9 138 8	35 85 40	74 33
Initial Fct:	253 1829 88	159 1672 241	246 407 179	100 446 195
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Volume:	253 1829 88	159 1672 241	246 407 179	100 446 185
Reducit Vol:	0 0 0	0 0 0	0 0 0	0 0 0
Reduced Vol:	253 1829 88	159 1672 241	246 407 179	100 446 185
PCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
MLF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Vol.:	253 1829 88	159 1672 241	246 407 179	100 446 185
Saturation Flow Module:				
Sat/Lane:	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800
Adjustment:	0.971.06 0.97	0.971.06 0.97	0.971.04 1.00	0.971.04 1.00
Lanes:	1.00 2.00 1.00	1.00 2.00 1.00	1.00 1.40 0.60	1.00 1.40 0.60
Final Sat.:	1750 3800 1750	1750 3800 1750	1750 3800 1750	1750 2612 1087
Capacity Analysis Module:				
Vol/Sat:	0.14 0.48 0.05	0.10 0.44 0.14	0.14 0.16 0.16	0.06 0.20 0.20
Crit Moves:	*****	*****	*****	*****
Green Time:	23.2 78.3 110.9	15.6 70.7 97.1	26.4 26.4 26.4	32.7 32.7 32.7
Volume/Cap:	1.03 1.01 0.08	1.01 1.03 0.23	0.88 1.03 0.23	0.30 1.03 1.03
Delay/Veh:	106.5 53.1 7.1	71 115.2 60.6	57.9 84.0 84.0	43.1 83.4 83.4
Delay Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
ProgAdjFctr:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
AddDel/Veh:	106.5 53.1 7.1	71 115.2 60.6	57.9 84.0 84.0	43.1 83.4 83.4
DesInqueue:	21 101 3	14 99 9	20 35 14	8 41 17

Level Of Service Computation Report
HCM Operations (Future Volume Alternative)
PM Peak

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 5 HCM Operations (Future Volume Alternative)
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Intersection #3: Moffatt/Middlefield

Initial Vol: 160 **Lanes:** 0 **Vol Cnt Date:** n/a **Cycle Time (sec):** 100 **Loss Time (sec):** 12 **Critical V/C:** 0.713 **Avg Crit Del (sec/veh):** 26.5 **Avg Delay (sec/veh):** 25.5 **Tots:** 184

Final Vol: 181 **Lanes:** 1 **Vol Cnt Date:** 72*** **Cycle Time (sec):** 100 **Loss Time (sec):** 12 **Critical V/C:** 0.713 **Avg Crit Del (sec/veh):** 26.5 **Avg Delay (sec/veh):** 25.5 **Tots:** 184

Capacity Analysis Module:		Vol/Sat		Analysis Module:	
Crit Moves:	****	0.06	0.20	0.04	0.09
Green Time:	14.2	27.5	27.5	7.0	20.3
Volume/Cap:	0.43	0.72	0.72	0.59	0.45
Delay/Veh:	30.6	26.7	26.7	39.3	26.9
Adj Del/Veh:	1.00	1.00	1.00	1.00	1.00
Prog/Adj/Ctr:	1.00	1.00	1.00	1.00	1.00
Adj Del/Veh:	30.6	26.7	26.7	39.3	26.9

Level Of Service Computation Report
HCM Operations (Future Volume Alternative)
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Signal Type	Initial Vol:	Lanes:	Vol Cnt	Date:	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):	LOS:
Signal=Protect/Rights=Include	197	0 1	253	n/a	100	12	0.936	40.6	36.1	D
Signal=Protect/Rights=Includ	301***	1	0	100	100	0	1	1	0	1
Signal Type	Initial Vol:	Lanes:	Vol Cnt	Date:	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):	LOS:
Signal=Protect/Rights=Include	913	1	1	n/a	100	12	0.936	40.6	36.1	D
Signal=Protect/Rights=Includ	151	0	1	1018***	100	0	1	1	0	1

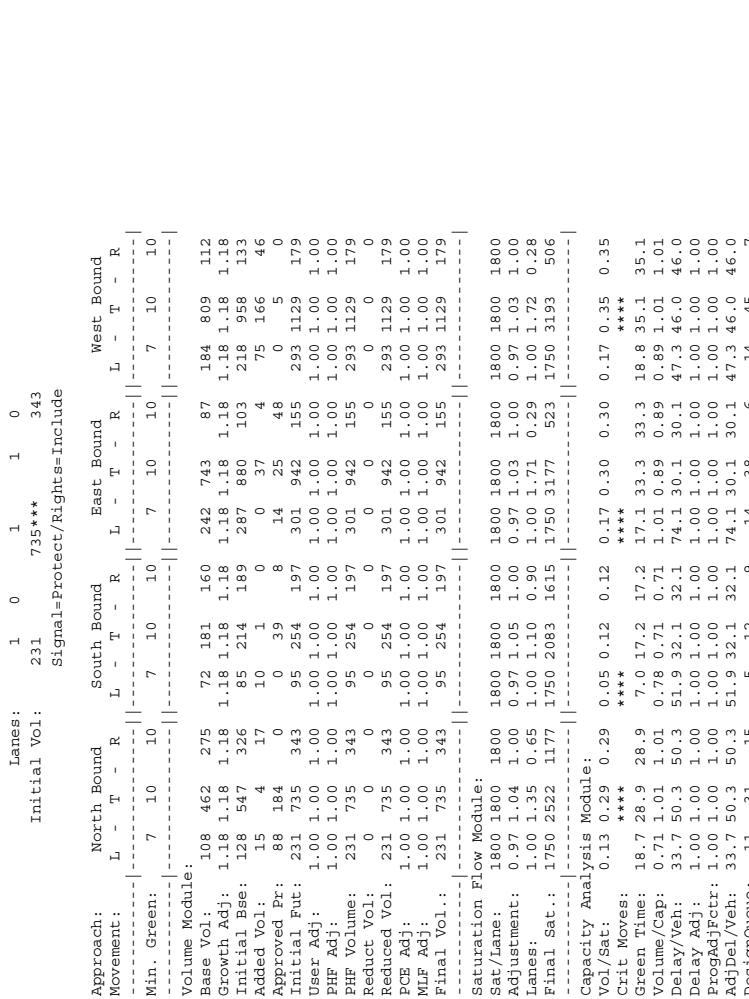
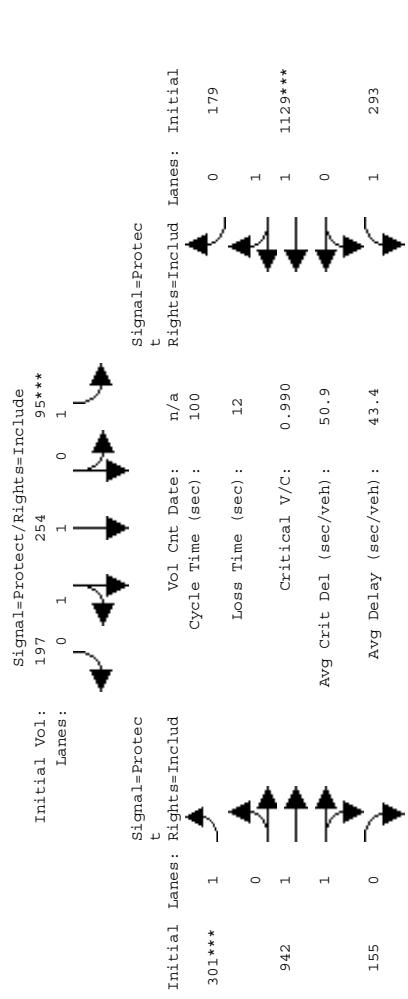
Lanes:	1	0	1	1	0			
Initial Vol.:	216		731*	**	330			
Signal=Protect/Rights=Include								
Approach:	North Bound	South Bound	East Bound	West Bound				
Movement:	L - T - R	L - T - R	L - T - R	L - T - R				
Min. Green:	7 10	10	7 10	10	7 10	10		
Volume Module:								
Growth Adj.:	1.18 1.18 1.18 1.18 1.18 1.18 1.18	1.18 1.18 1.18 1.18 1.18 1.18 1.18	1.18 1.18 1.18 1.18 1.18 1.18 1.18	1.18 1.18 1.18 1.18 1.18 1.18 1.18	1.18 1.18 1.18 1.18 1.18 1.18 1.18	1.18 1.18 1.18 1.18 1.18 1.18 1.18	1.18 1.18 1.18 1.18 1.18 1.18 1.18	
Initial Bce:	128 547	326	85 214	189	287 880	103	218 958	
Added Dvl:	0	0 4	2	0	8	0	25 55	
Approved Pr:	88 184		0 39	8	14 25	48	0 5	
Initial Fut:	216 731	330	87 253	197	301 913	151	243 1018	
User Adj.:	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Adj.:	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Volume:	216 731	330	87 253	197	301 913	151	243 1018	
Reducut Vol.:	0	0 0	0	0	0	0	0 0	
Reduced Vol.:	216 731	330	87 253	197	301 913	151	243 1018	
PCF Adj.:	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	
MLF Adj.:	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	
Final Vol.:	216 731	330	87 253	197	301 913	151	243 1018	
Saturation Flow Module:								
Sat/Lane:	1800 1800	1800	1800 1800	1800	1800 1800	1800	1800 1800	
Adjustment:	9.7 1.04	1.00	9.7 1.05	1.00	9.7 1.03	1.00	9.7 1.03	1.00
Lanes:	1.00 1.36	0.64	1.00 1.10	0.90	1.00 1.71	0.29	1.00 1.74	0.26
Final Sat.:	1750 2548	1150	1750 2079	1619	1750 3175	525	1750 3230	470

Capacity Analysis Module:									
Vol/Sat:	0.12	0.29	0.29	0.05	0.12	0.12	0.17	0.29	0.14
Crit Moves:	****			****			****		****
Green Time:	18.6	30.0	30.0	7.0	18.4	18.4	18.0	34.4	16.6
Volume/Cap:	0.66	0.96	0.96	0.71	0.66	0.66	0.96	0.84	0.84
Delay/Veh:	32.1	38.9	38.9	46.0	30.5	30.5	59.3	26.5	45.6
ProgAdjFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.1	38.9	38.9	46.0	30.5	30.5	59.3	26.5	45.6
AdjDel/Veh:	32.1	38.9	38.9	46.0	30.5	30.5	59.3	26.5	45.6

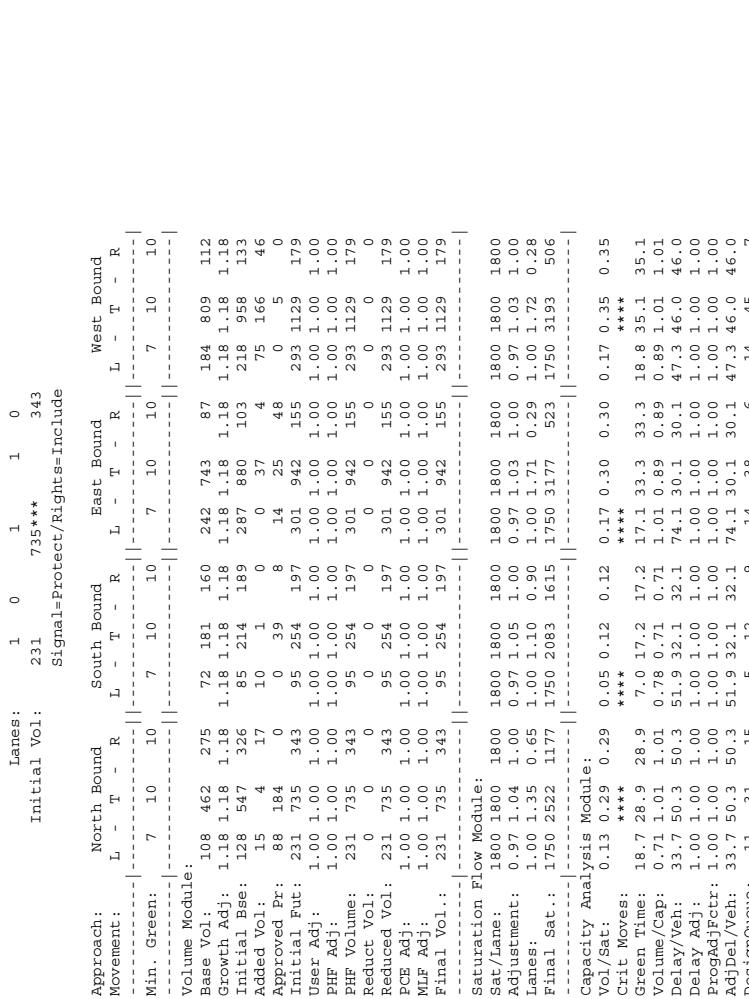
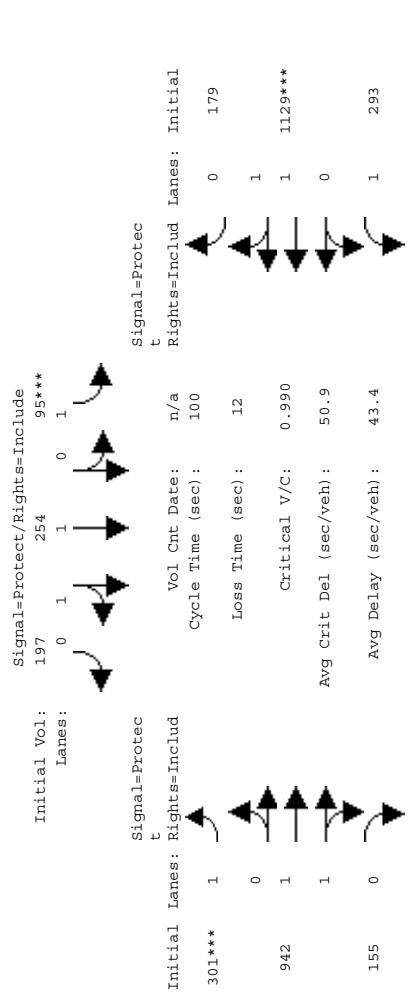
Level Of Service Computation Report
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PM Peak

Intersection #4: Moffett/NB Ramp

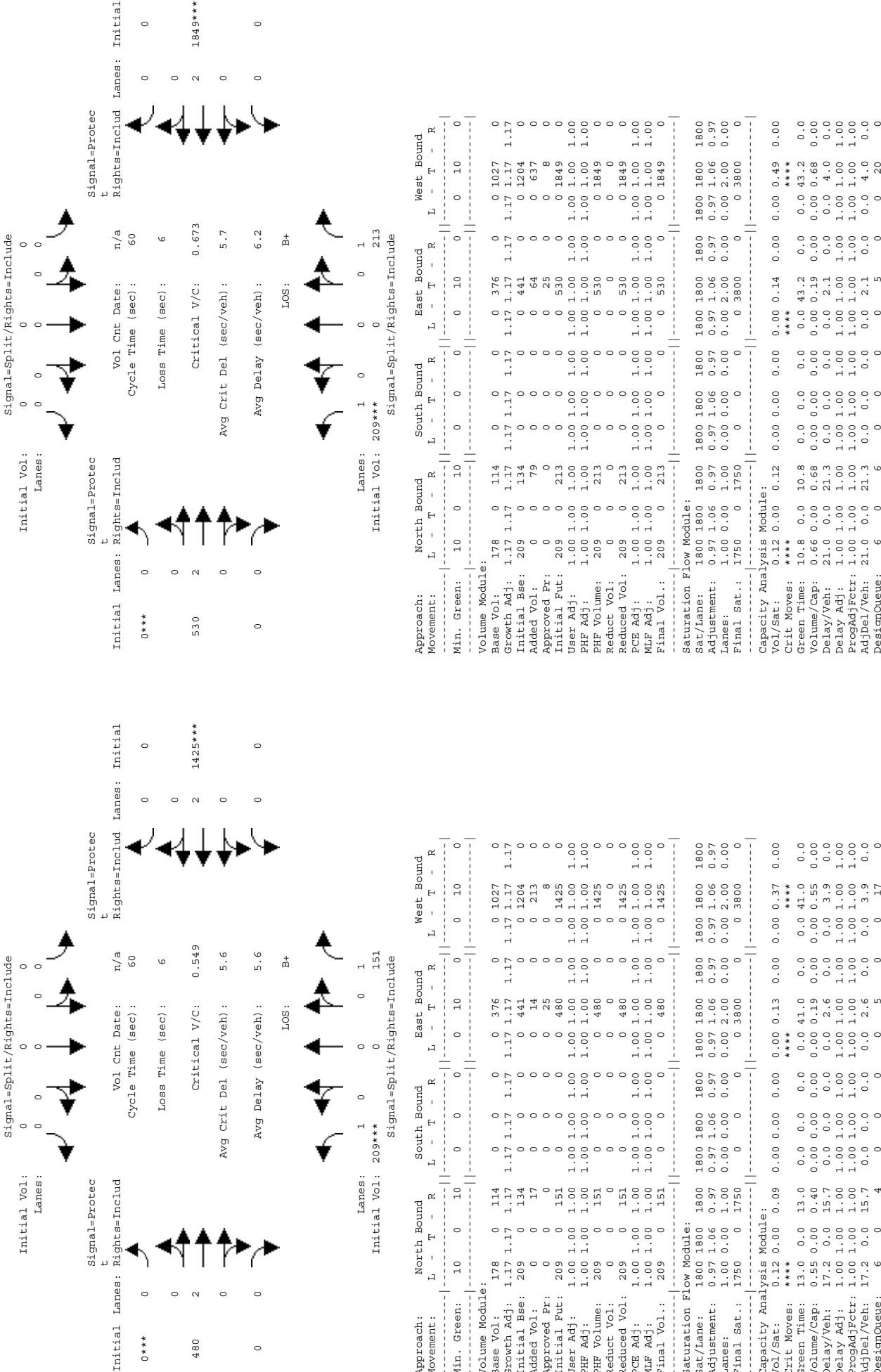


Intersection #4: Moffett/85 NB Ramp



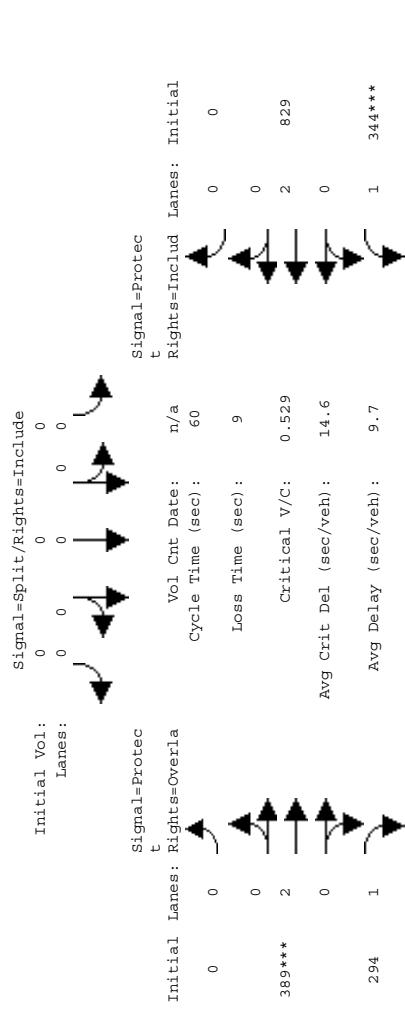
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1985 HCM Operations (Future Volume Alternative)
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1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 3



Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM Peak

Intersection #5: Moffett/101 SB Ramps
Intersection #5: Moffett/101 SB Ramps
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1



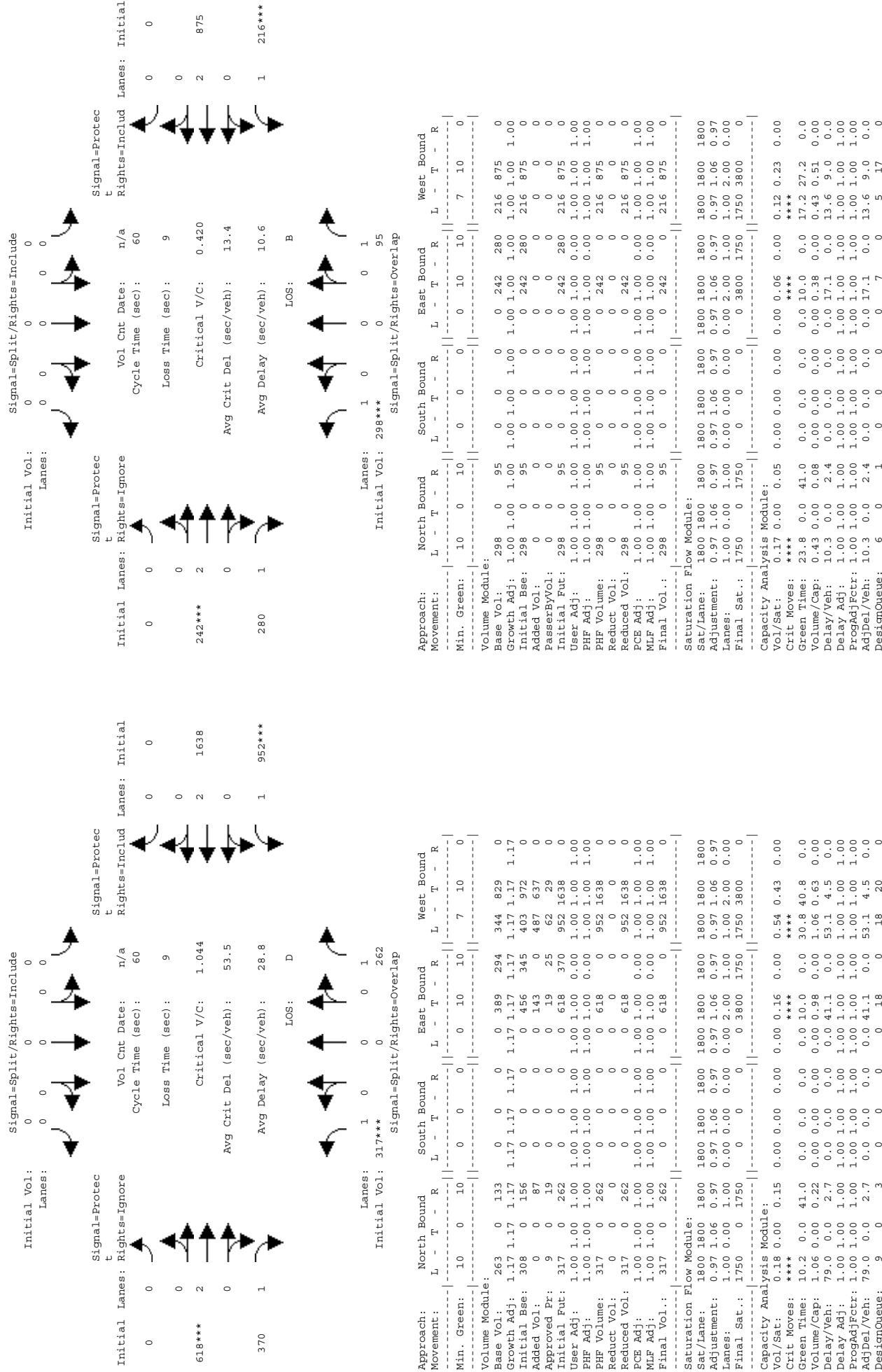
Approach:	North Bound	South Bound	East Bound	West Bound	Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	10 0	10 0	0 10	10 0	Min. Green:	10 0	10 0	0 10	10 0
Volume Module:									
Base Vol:	263 0	133 0	0 0	0 0	Base Vol:	263 0	133 0	0 0	294 344
Growth Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	Growth Adj:	1.17 1.17	1.17 1.17	1.17 1.17	1.17 1.17
Initial Bee:	263 0	133 0	0 0	0 0	Initial Bee:	308 0	156 0	0 0	345 403
Added Vol:	0 0	0 0	0 0	0 0	Added Vol:	0 0	19 0	0 0	972 162
PassesByVol:	0 0	0 0	0 0	0 0	Approved Pr:	9 0	19 0	0 0	213 0
Initial Fut:	263 0	133 0	0 0	0 0	Initial Fut:	317 0	194 0	0 0	25 62
User Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	User Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	PHF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Volume:	263 0	133 0	0 0	0 0	PHF Volume:	317 0	194 0	0 0	370 627
Reduced Vol:	0 0	0 0	0 0	0 0	Reduced Vol:	0 0	0 0	0 0	1214 0
PCE Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	PCE Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
MLF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	MLF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
Final Vol.:	263 0	133 0	0 0	0 0	Final Vol.:	317 0	194 0	0 0	3800 627
Saturation Flow Module:									
Sat/Lane:	1800 1800	1800 1800	1800 1800	1800 1800	Sat/Lane:	1800 1800	1800 1800	1800 1800	1800 1800
Adjustment:	0.97 1.06	0.97 1.06	0.97 1.06	0.97 1.06	Adjustment:	0.97 1.06	0.97 1.06	0.97 1.06	0.97 1.06
Lanes:	1.00 0.00	1.00 0.00	0.00 0.00	0.00 0.00	Lanes:	1.00 0.00	1.00 0.00	0.00 0.00	1.00 0.00
Final Sat.:	1750 0	1750 0	0 0	0 0	Final Sat.:	1750 0	1750 0	0 0	3800 1750
Capacity Analysis Module:									
Vol/Sat:	0.15 0.00	0.08 0.00	0.00 0.00	0.00 0.10	0.17 0.20	0.22 0.00	0.00 0.00	0.00 0.13	0.00 0.36
Crit Moves:	*****	*****	*****	*****	Green Time:	13.7	0.0	40.9	0.0
Green Time:	17.1	0.0	39.4	0.0	0.0	11.6	28.7	22.3	27.3
Volume/Cap:	0.53 0.00	0.12 0.00	0.00 0.00	0.00 0.53	Volume/Cap:	0.79 0.00	0.16 0.00	0.00 0.00	0.79 0.51
Delay/Veh:	1.16 0.0	2.9 0.0	0.0 0.0	0.0 17.1	Delay/Veh:	23.6	0.0	2.6	0.0
Delay Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	Delay Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
ProgAdjFcrr:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	ProgAdjFcrr:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
AddJl/Veh:	14.6 0.0	2.9 0.0	0.0 0.0	0.0 17.1	AddJl/Veh:	23.6 0.0	2.6 0.0	0.0 0.0	14.5 5.0
DesignQueue:	7 0	2 0	0 0	0 11	DesignQueue:	9 0	2 0	0 0	15 0

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 3

Intersection #5: Moffett/101 SB Ramps
Intersection #6: Moffett/101 NB Ramps

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)

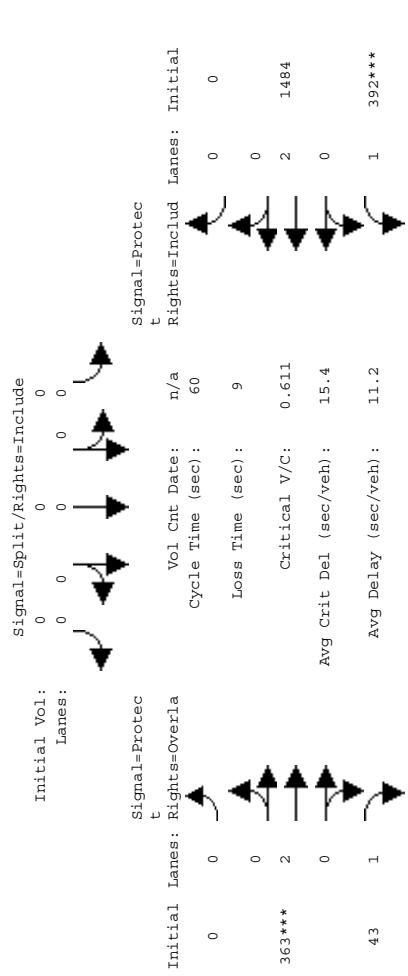
PM Peak



Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 3

Intersection #6: Moffett/101 NB Ramps



Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Min. Green: 10 0 10 0 10 0 10 0 10 0 10 0 10 0 10 0 10 0

Volume Module:

Base Vol:	298	0	95	0	0	242	0	95	0	0	242	0	216	875	0		
Growth Adj:	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17		
Initial Bee:	349	0	111	0	0	284	0	253	1026	0	111	0	0	284	0	253	1026
Added Vol:	0	0	24	0	0	0	0	129	375	0	109	0	0	230	0	387	1124
Approved Pr:	0	0	65	0	0	0	0	29	43	10	83	0	0	29	43	10	83
Initial Fut:	349	0	200	0	0	0	0	363	43	392	1484	0	0	543	43	650	2233
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	349	0	200	0	0	0	0	363	43	392	1484	0	0	285	0	0	43
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	349	0	200	0	0	0	0	363	43	392	1484	0	0	285	0	0	43

Saturation Flow Module:

Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	
Adjustment:	0.97	1.06	0.97	1.06	0.97	1.06	0.97	1.06	0.97	1.06	0.97	1.06	0.97	1.06	0.97	1.06	0.97
Lanes:	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Final Sat.:	1750	0	1750	0	0	0	0	3800	1750	3800	0	0	0	3800	1750	3800	0

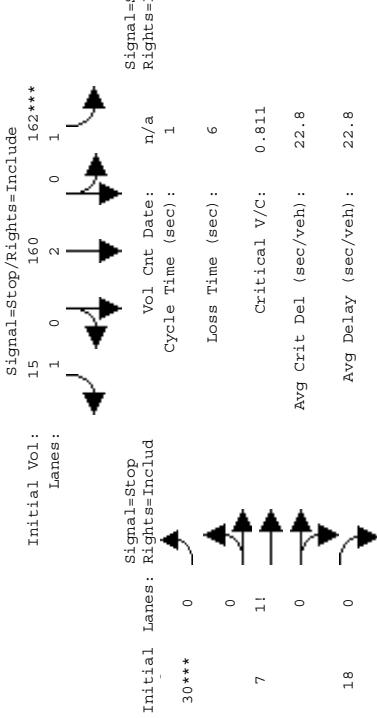
Capacity Analysis Module:

Vol/Sat:	0.20	0.00	0.11	0.00	0.00	0.10	0.02	0.22	0.39	0.00	0.00	0.00	0.00	0.14	0.02	0.37	0.59	0.00		
Crit Moves:	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****		
Green Time:	19.3	0.0	41.0	0.0	0.0	0.0	0.0	29.3	21.7	31.7	0.0	0.0	0.0	0.0	0.0	22.9	28.1	38.1	0.0	
Volume/Cap:	0.62	0.00	0.17	0.00	0.00	0.00	0.00	0.57	0.05	0.62	0.74	0.00	0.00	0.00	0.00	0.06	0.79	0.93	0.00	
Delay/Veh:	1.46	0.0	2.6	0.0	0.0	0.0	0.0	0.18	6.1	13.3	9.4	0.0	0.0	0.0	0.0	26.4	8.9	14.0	12.4	
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
ProgAdjFcrr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Addl/Veh:	14.6	0.0	2.6	0.0	0.0	0.0	0.0	18.5	6.1	13.3	9.4	0.0	0.0	0.0	0.0	26.4	8.9	14.0	12.4	
DesignQueue:	8	0	2	0	0	0	0	10	1	9	26	0	0	0	0	16	1	13	32	0

Level Of Service Computation Report
1997 HCM 4-Way Stop (Future Volume Alternative)
PM Peak

Level Of Service Computation Report
97 HCM 4-Way Stop (Future Volume Alternative)
PM 2013 Project Alt. 1

Intersection #7: Moffett-Clark/Moffett Extension

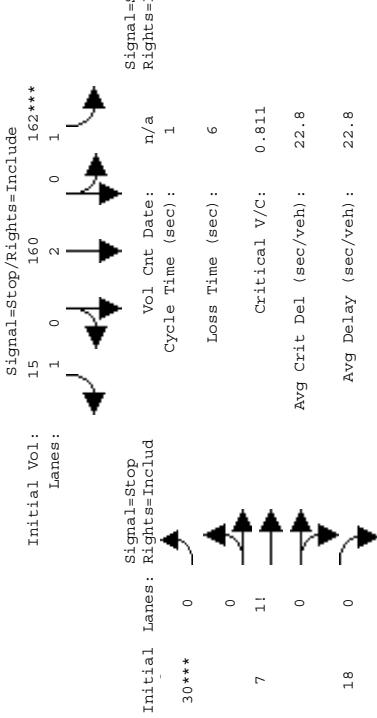


Sigmoid-Delay/Regional-Module												
Approach:	North Bound			South Bound			East Bound			West Bound		
	L - T	- R	L - T	- R	L - T	- R	L - T	- R	L - T	- R	L - T	- R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Volume Module:												
Base Vol:	10	770	121	162	160	15	30	7	18	49	3	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Initial Bse:	10	770	121	162	160	15	30	7	18	49	3	
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	
GPSSBVol:	0	0	0	0	0	0	0	0	0	0	0	
Initial Fut:	10	770	121	162	160	15	30	7	18	49	3	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PPIFF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PPIFF Volume:	10	770	121	162	160	15	30	7	18	49	3	
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	10	770	121	162	160	15	30	7	18	49	3	
GPCEAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
GPMLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Final Vol.:	10	770	121	162	160	15	30	7	18	49	3	
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Jdane:	0.02	1.71	0.27	1.00	2.00	1.00	0.54	0.13	0.33	0.94	0.06	
Final Sat.:	12	962	154	422	889	484	234	55	141	412	25	
Capacity Analysis Module:												
VOL/Sat.:	0.81	0.80	0.79	0.38	0.18	0.03	0.13	0.13	0.13	0.12	0.12	
CRIT/Mov. Veh.:	****	****	****	****	****	****	****	****	****	****	****	
Delay Veh.:	10.07	29.4	27.7	15.8	12.1	10.0	12.0	12.0	12.0	11.7	11.7	
Delay Adj/Veh.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj/Veh.:	30.07	29.4	27.7	15.8	12.1	10.0	12.0	12.0	12.0	11.7	11.7	
D/D:	C	B	A	B	B	A	B	B	B	B	B	
Approachable:	29.2			13.8			12.0			16.4		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjD1:	29.2			13.8			12.0			16.4		

Level Of Service Computation Report
97 HCM 4-way Stop (Future Volume Alternative)
PM 2013 Project Alt. 1

Level Of Service Computation Report
97 HCM 4-Way Stop (Future Volume Alternative)
PM 2013 Project Alt. 1

Intersection #7: Moffett-Clark/Moffett Extension

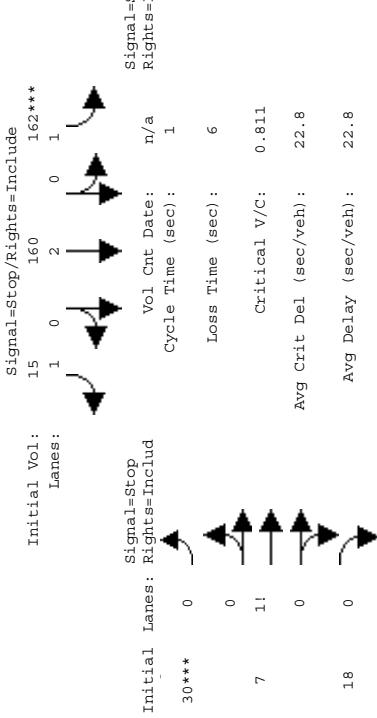


Sigmoid-Delay/Regional-Module												
Approach:	North Bound			South Bound			East Bound			West Bound		
	L - T	- R	L - T	- R	L - T	- R	L - T	- R	L - T	- R	L - T	- R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Volume Module:												
Base Vol:	10	770	121	162	160	15	30	7	18	49	3	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Initial Bse:	10	770	121	162	160	15	30	7	18	49	3	
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	
GPSSBVol:	0	0	0	0	0	0	0	0	0	0	0	
Initial Fut:	10	770	121	162	160	15	30	7	18	49	3	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PPIFF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PPIFF Volume:	10	770	121	162	160	15	30	7	18	49	3	
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	10	770	121	162	160	15	30	7	18	49	3	
GPCEAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
GPMLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Final Vol.:	10	770	121	162	160	15	30	7	18	49	3	
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Jdane:	0.02	1.71	0.27	1.00	2.00	1.00	0.54	0.13	0.33	0.94	0.06	
Final Sat.:	12	962	154	422	889	484	234	55	141	412	25	
Capacity Analysis Module:												
VOL/Sat.:	0.81	0.80	0.79	0.38	0.18	0.03	0.13	0.13	0.13	0.12	0.12	
CRIT/Mov. Veh.:	****	****	****	****	****	****	****	****	****	****	****	
Delay Veh.:	10.07	29.4	27.7	15.8	12.1	10.0	12.0	12.0	12.0	11.7	11.7	
Delay Adj/Veh.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj/Veh.:	30.07	29.4	27.7	15.8	12.1	10.0	12.0	12.0	12.0	11.7	11.7	
D/D:	C	B	A	B	B	B	B	B	B	B	B	
Approachable:	29.2			13.8			12.0			16.4		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjD1:	29.2			13.8			12.0			16.4		

Level Of Service Computation Report
97 HCM 4-way Stop (Future Volume Alternative)
PM 2013 Project Alt. 1

Level Of Service Computation Report
97 HCM 4-Way Stop (Future Volume Alternative)
PM 2013 Project Alt. 1

Intersection #7: Moffett-Clark/Moffett Extension

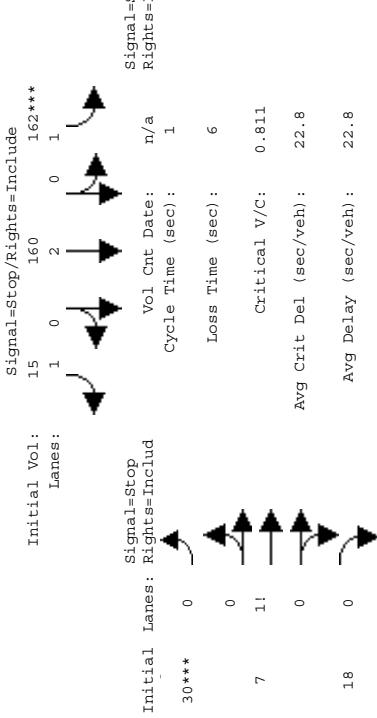


Sigmoid-Delay/Regional-Module												
Approach:	North Bound			South Bound			East Bound			West Bound		
	L - T	- R	L - T	- R	L - T	- R	L - T	- R	L - T	- R	L - T	- R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Volume Module:												
Base Vol:	10	770	121	162	160	15	30	7	18	49	3	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Initial Bse:	10	770	121	162	160	15	30	7	18	49	3	
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	
GPSSBVol:	0	0	0	0	0	0	0	0	0	0	0	
Initial Fut:	10	770	121	162	160	15	30	7	18	49	3	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PPIFF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PPIFF Volume:	10	770	121	162	160	15	30	7	18	49	3	
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	10	770	121	162	160	15	30	7	18	49	3	
GPCEAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
GPMLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Final Vol.:	10	770	121	162	160	15	30	7	18	49	3	
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Jdane:	0.02	1.71	0.27	1.00	2.00	1.00	0.54	0.13	0.33	0.94	0.06	
Final Sat.:	12	962	154	422	889	484	234	55	141	412	25	
Capacity Analysis Module:												
VOL/Sat.:	0.81	0.80	0.79	0.38	0.18	0.03	0.13	0.13	0.13	0.12	0.12	
CRIT/Mov. Veh.:	****	****	****	****	****	****	****	****	****	****	****	
Delay Veh.:	10.07	29.4	27.7	15.8	12.1	10.0	12.0	12.0	12.0	11.7	11.7	
Delay Adj/Veh.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj/Veh.:	30.07	29.4	27.7	15.8	12.1	10.0	12.0	12.0	12.0	11.7	11.7	
D/D:	C	B	A	B	B	A	B	B	B	B	B	
Approachable:	29.2			13.8			12.0			16.4		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjD1:	29.2			13.8			12.0			16.4		

Level Of Service Computation Report
97 HCM 4-way Stop (Future Volume Alternative)
PM 2013 Project Alt. 1

Level Of Service Computation Report
97 HCM 4-Way Stop (Future Volume Alternative)
PM 2013 Project Alt. 1

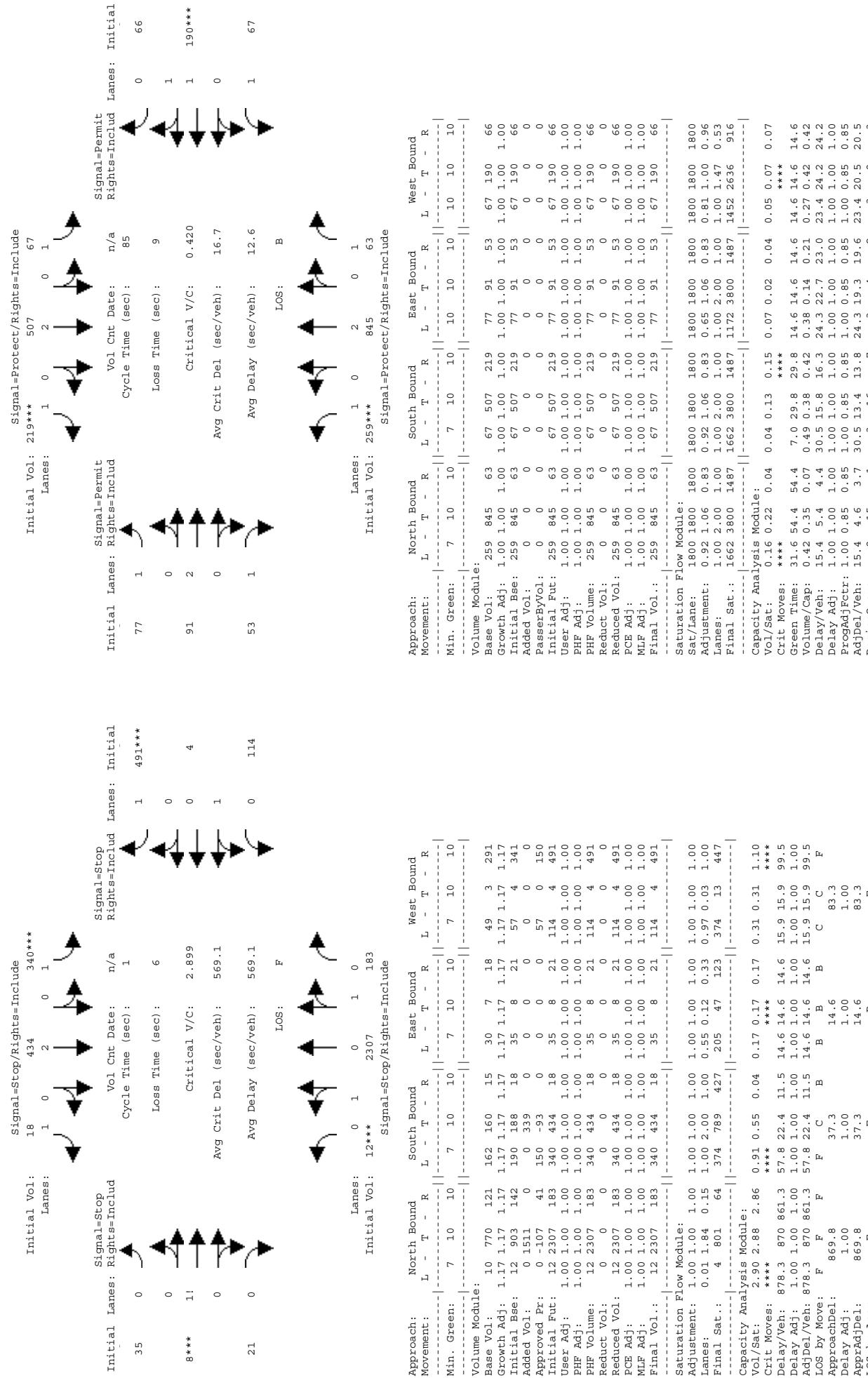
Intersection #7: Moffett-Clark/Moffett Extension



Sigmoid-Delay/Regional-Module												
Approach:	North Bound			South Bound			East Bound			West Bound		
	L - T	- R	L - T	- R	L - T	- R	L - T	- R	L - T	- R	L - T	- R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Volume Module:												
Base Vol:	10	770	121	162	160	15	30	7	18	49	3	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Initial Bse:	10	770	121	162	160	15	30	7	18	49	3	
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	
GPSSBVol:	0	0	0	0	0	0	0	0	0	0	0	
Initial Fut:	10	770	121	162	160	15	30	7	18	49	3	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PPIFF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PPIFF Volume:	10	770	121	162	160	15	30	7	18	49	3	
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	10	770	121	162	160	15	30	7	18	49	3	
GPCEAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
GPMLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Final Vol.:	10	770	121	162	160	15	30	7	18	49	3	
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Jdane:	0.02	1.71	0.27	1.00	2.00	1.00	0.54	0.13	0.33	0.94	0.06	
Final Sat.:	12	962	154	422	889	484	234	55	141	412	25	
Capacity Analysis Module:												
VOL/Sat.:	0.81	0.80	0.79	0.38	0.18	0.03	0.13	0.13	0.13	0.12	0.12	
CRIT/Mov. Veh.:	****	****	****	****	****	****	****	****	****	****	****	
Delay Veh.:	10.07	29.4	27.7	15.8	12.1	10.0	12.0	12.0	12.0	11.7	11.7	
Delay Adj/Veh.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj/Veh.:	30.07	29.4	27.7	15.8	12.1	10.0	12.0	12.0	12.0	11.7	11.7	
D/D:	C	B	A	B	B	B	B	B	B	B	B	
Approachable:	29.2			13.8			12.0			16.4		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjD1:	29.2			13.8			12.0			16.4		

Level Of Service Computation Report
1997 HCM 4-Way Stop (Future Volume Alternative)
PM 2013 Project Alt. 3

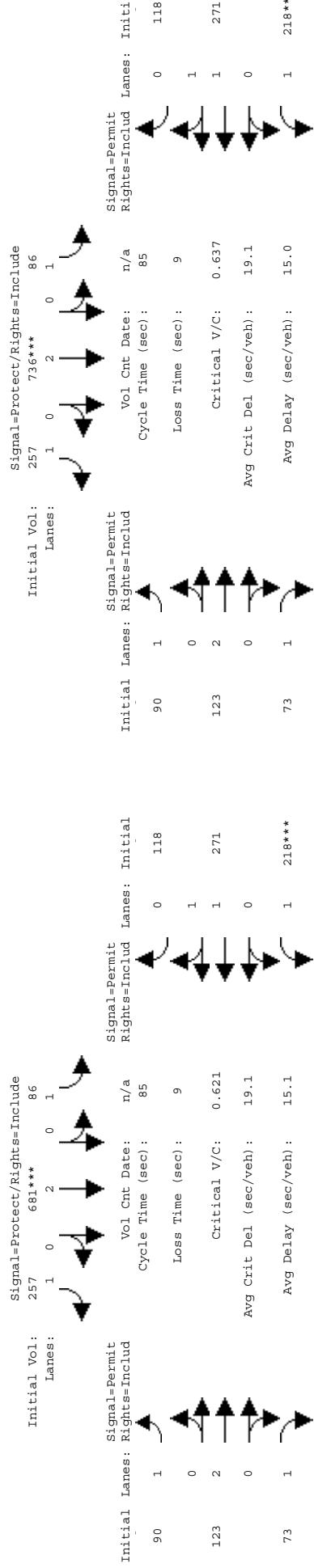
Intersection #7: Moffett-Clark/Moffett Extension
Intersection #8: Whisman/Middlefield
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM Peak



Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 3

Intersection #8: Whisman/Middlefield

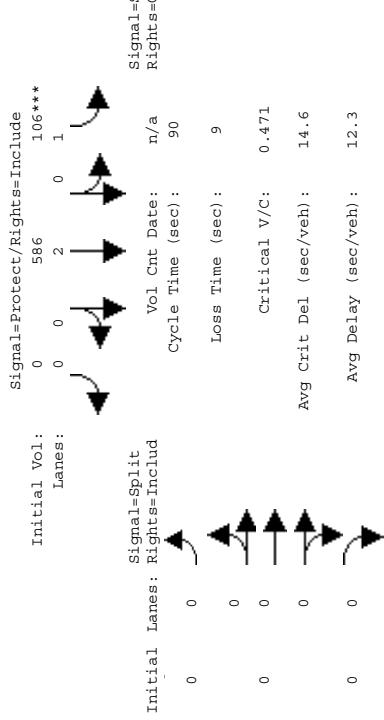


Approach:	North Bound	South Bound	East Bound	West Bound	Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	7 10 10	7 10 10	10 10 10	10 10 10	Min. Green:	7 10 10	7 10 10	10 10 10	10 10 10
Volume Module:					Volume Module:				
Base Vol:	259	845	63	67	Base Vol:	259	845	63	67
Growth Adj:	1.17	1.17	1.17	1.17	Growth Adj:	1.17	1.17	1.17	1.17
Initial Bce:	304	991	74	79	Initial Bce:	304	991	74	79
Added Vol:	0	4	0	0	Added Vol:	0	36	0	0
Approved Pr:	345	1196	104	86	Approved Pr:	41	201	41	41
Initial Fct:	345	1196	104	86	Initial Fct:	345	1228	104	86
User Adj:	1.00	1.00	1.00	1.00	User Adj:	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	PHF Adj:	1.00	1.00	1.00	1.00
PHF Volume:	345	1196	104	86	PHF Volume:	345	1228	104	86
Reducit Vol:	0	0	0	0	Reducit Vol:	0	0	0	0
Reduced Vol:	345	1196	104	86	Reduced Vol:	345	1228	104	86
PCE Adj:	1.00	1.00	1.00	1.00	PCE Adj:	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	MLF Adj:	1.00	1.00	1.00	1.00
Final Vol.:	345	1196	104	86	Final Vol.:	345	1228	104	86
Saturation Flow Module:					Saturation Flow Module:				
Vol/Lane:	1800	1800	1800	1800	Vol/Lane:	1800	1800	1800	1800
Adjustment:	0.92	1.06	0.83	0.92	Adjustment:	0.92	1.06	0.83	0.92
Lanes:	1.00	2.00	1.00	2.00	Lanes:	1.00	2.00	1.00	2.00
Final Sat.:	1662	3800	1487	1662	Final Sat.:	1662	3800	1487	1662
Capacity Analysis Module:					Capacity Analysis Module:				
Vol/Sat:	0.21	0.31	0.07	0.05	Vol/Sat:	0.21	0.32	0.07	0.05
Crit Moves:	*****	*****	*****	*****	Crit Moves:	*****	*****	*****	*****
Green Time:	28.4	46.0	7.0	24.5	Green Time:	27.7	46.5	46.5	25.8
Volume/Cap:	0.62	0.58	0.13	0.63	Volume/Cap:	0.64	0.59	0.13	0.63
Delay/Veh:	19.6	10.3	7.3	34.7	Delay/Veh:	20.3	10.1	7.1	34.7
ProgAdjFctr:	1.00	1.00	1.00	1.00	ProgAdjFctr:	1.00	1.00	1.00	1.00
AddDel/Veh:	19.6	8.7	6.2	34.7	AddDel/Veh:	20.3	8.6	6.0	34.7
DesgnQueue:	11	28	2	4	DesgnQueue:	12	29	2	4

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Intersection #9: Ellis/Middlefield



Initial Vol: 0.00 0.25 0.25 0.06 0.15 0.00 0.00 0.00 0.11 0.00 0.17
Lanes: * * * * 6.0 0.0 0.0 0.0 0.97 1.06 0.97 1.06 0.88 1.06 0.97
Sat/Lane: 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800
Adjustment: 0.971.03 1.00 0.97 1.06 0.97 0.97 1.06 0.97 1.06 0.97
Lane Sat.: 0.00 1.66 0.34 1.00 2.00 0.00 0.00 0.00 2.00 0.00 1.00
Final Sat.: 0.00 3.091 6.08 1750 3800 0 0 0 3150 0 1750

Capacity Analysis Module:

Vol/Sat: 0.00 0.25 0.25 0.06 0.15 0.00 0.00 0.00 0.11 0.00 0.17

Crit Moves: * * * * 6.4 4.8 4.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

Green Time: 0.0 48.4 11.6 60.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

Volume/Cap: 0.00 0.47 0.33 0.47 0.23 0.00 0.00 0.00 0.47 0.00 0.47

Delay/Veh:

0.0 9.9 2.4 28.8 4.45 0.0 0.0 0.0 0.0 0.0 0.0

Delay Adj:

1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

ProgAdjFctr:

1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

AddDel/Veh:

0.0 9.9 2.4 28.8 4.45 0.0 0.0 0.0 0.0 0.0 0.0

DesInqueue:

0 19 2 5 10 0 0 0 14 0 10

Saturation Flow Module:

Sat/Lane: 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800

Adjustment: 0.971.04 1.00 0.97 1.06 0.97 0.97 1.06 0.97 1.06 0.97

Lanes: 0.0 1.52 0.48 0.48 1.00 2.00 0.00 0.00 0.00 0.00 2.00

Final Sat.: 0.0 2.839 8.60 1750 3800 0 0 0 0 0 3150

Capacity Analysis Module:

Vol/Sat: 0.00 0.39 0.39 0.08 0.24 0.00 0.00 0.00 0.00 0.00 0.25

Crit Moves: * * * * 71.8 9.2 53.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0

Green Time: 0.0 44.0 44.0 21.0 0.0 32.6

Volume/Cap: 0.00 0.80 0.49 0.80 0.41 0.00 0.00 0.00 0.00 0.00 0.60

Delay/Veh:

0.0 16.5 2.4 44.8 7.6 0.0 0.0 0.0 0.0 0.0 16.8

Delay Adj:

1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

ProgAdjFctr:

1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

AddDel/Veh:

0.0 16.5 2.4 44.8 7.6 0.0 0.0 0.0 0.0 0.0 16.8

DesInqueue:

0 32 4 7 20 0 0 0 0 0 28



Intersection #9: Ellis/Middlefield

Signal=Protect/Rights=Include

Initial Vol: 0 0 2 0 1
Lanes: 0 0 2 0 1

Signal=Split Rights=Includ

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Overlap

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Protect/Rights=Overlap

Initial Vol: 0 0 1 0 0
Lanes: 0 0 1 0 0

Signal=Protect/Rights=Include

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Includ

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Overlap

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Protect/Rights=Overlap

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Protect/Rights=Include

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Includ

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Overlap

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Protect/Rights=Overlap

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Protect/Rights=Include

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Includ

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Overlap

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

LOS: C

Signal=Protect/Rights=Include

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Includ

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Overlap

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Protect/Rights=Overlap

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Protect/Rights=Include

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Includ

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Overlap

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Protect/Rights=Overlap

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Protect/Rights=Include

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Includ

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Overlap

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Protect/Rights=Overlap

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Protect/Rights=Include

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Includ

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Overlap

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

LOS: C

Signal=Protect/Rights=Include

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Includ

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Overlap

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Protect/Rights=Overlap

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Protect/Rights=Include

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Includ

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Overlap

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Protect/Rights=Overlap

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Protect/Rights=Include

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Includ

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Overlap

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Protect/Rights=Overlap

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Protect/Rights=Include

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Includ

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Overlap

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

LOS: C

Signal=Protect/Rights=Include

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Includ

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Overlap

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Protect/Rights=Overlap

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Protect/Rights=Include

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Includ

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Overlap

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Protect/Rights=Overlap

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Protect/Rights=Include

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Includ

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Overlap

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Protect/Rights=Overlap

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Protect/Rights=Include

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Includ

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Overlap

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

LOS: C

Signal=Protect/Rights=Include

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Includ

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Overlap

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Protect/Rights=Overlap

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Protect/Rights=Include

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Includ

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Overlap

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Protect/Rights=Overlap

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Protect/Rights=Include

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Includ

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Split Rights=Overlap

Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Protect/Rights=Overlap

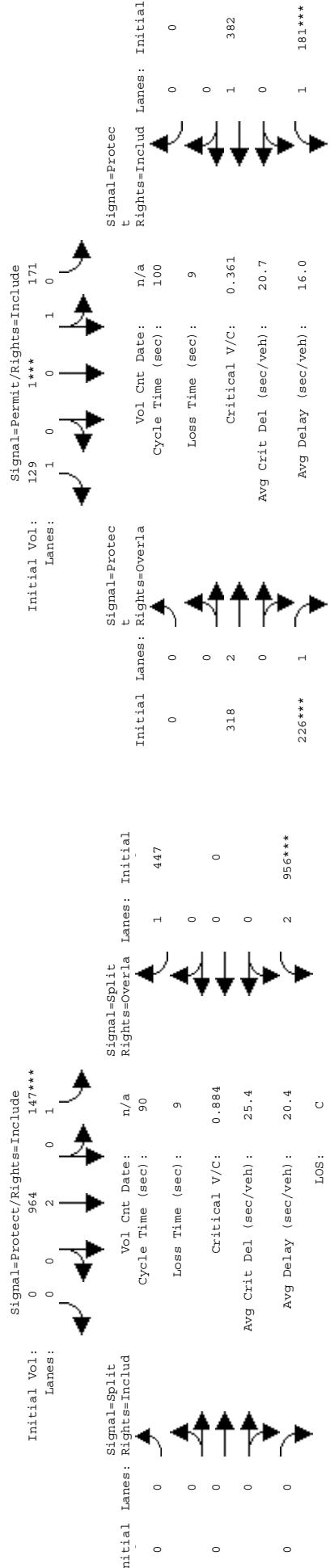
Initial Vol: 0 0 0 0 0
Lanes: 0 0 0 0 0

Signal=Protect/Rights=Include

<p

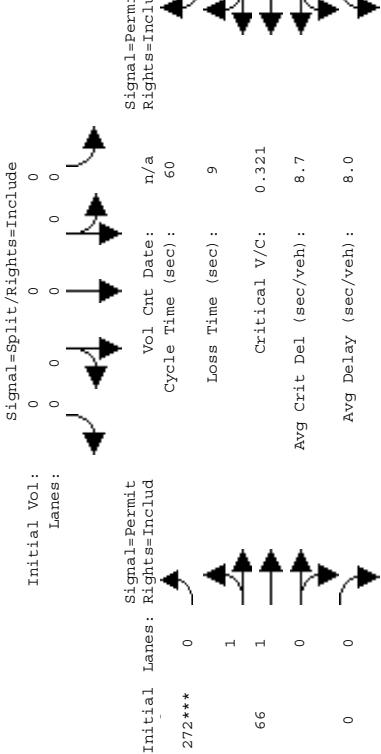
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**Level Of Service Computation Report
85 HCM Operations (Future Volume Alternative)
PM Peak**



Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM Peak

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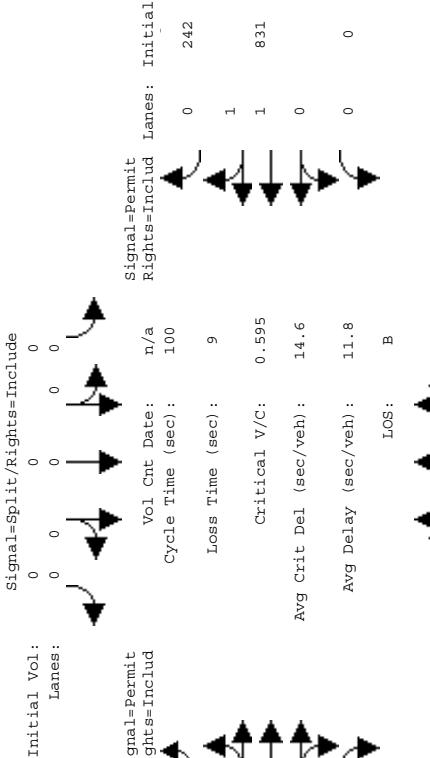


Lanes: 1 0 0 0 1
Initial Vol: 212*** 18 58
Signal=Split/Rights=Include

Approach:	North Bound	South Bound	East Bound	West Bound
L - T - R movement:	-----	-----	-----	-----
Min. Green:	10 10 10	0 0 0	10 10 0	0 10 0
Volume Module:	-----	-----	-----	-----
Base Vol:	212 18 58	0 0 0	272 66 0	0 355 170
Growth Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Additional Base:	212 18 58	0 0 0	272 66 0	0 355 170
PasserbyVol:	0 0 0	0 0 0	0 0 0	0 0 0
Initial Vol:	212 18 58	0 0 0	272 66 0	0 355 170
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HFH Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HFH Volume:	212 18 58	0 0 0	272 66 0	0 355 170
Reduced Vol:	0 0 0	0 0 0	0 0 0	0 0 0
Reduced Vol:	212 18 58	0 0 0	272 66 0	0 355 170
PFCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
MLF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Vol.:	212 18 58	0 0 0	272 66 0	0 355 170
Saturation Flow Module:	-----	-----	-----	-----
sat/Lane:	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800
Adj/adjustment:	1.00 1.00 1.00	0.97 1.06 0.97	1.06 0.97 1.06	0.97 1.04 1.00
lanes:	1.00 0.24 0.76	0.00 0.00 0.00	1.00 1.00 1.00	0.00 1.33 0.67
Final Sat.:	1800 426 1374	0 0 0	1750 1900 0	0 2501 1198
Capacity Analysis Module:	-----	-----	-----	-----
Vol/Sat:	0.12 0.04 0.04	0.00 0.00 0.00	0.16 0.03 0.00	0.00 0.14 0.14
Unit Moves:	*****			
Volume/Cap:	0.32 0.12 0.12	0.00 0.00 0.00	0.32 0.07 0.00	0.00 0.29 0.29
Delay/Veh:	10.4 9.6 9.6	0.0 0.0 0.0	7.3 6.3 0.0	0.0 7.1 7.1
Delay/Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
ProgrAdj/ctfr:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Del/Veh:	10.4 9.6 9.6	0.0 0.0 0.0	7.3 6.3 0.0	0.0 7.1 7.1
Questionnaire:	5 1 0	0 0 0	5 1 0	0 6 3

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Lanes: 1 0 0 0 1
Initial Vol: 336*** 21 35
Signal=Split/Rights=Include

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	10 10 10	0 0 0	10 10 0	0 10 10
Volume Module:	-----	-----	-----	-----
Base Vol.:	212 18	58 0	0 0	272 66
Incr. Growth Adj.:	1.17 1.17	1.17 1.17	1.17 1.17	1.17 1.17
Initial Bse.:	249 21	68 0	0 0	319 77
Added Vol.:	0 0	24 0	0 0	0 12
Approved Pr:	87 0	-57 0	0 0	302 45
Initial Fut.:	336 21	35 0	0 0	621 134
User Adj.:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHIF Adj.:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHIF Volume:	336 21	35 0	0 0	621 134
Reducut Vol.:	0 0	0 0	0 0	0 0
Reduced Vol.:	336 21	35 0	0 0	621 134
ECB Adj.:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
MLIF Adj.:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
Final Vol.:	336 21	35 0	0 0	621 134
Saturation Flow Module:	-----	-----	-----	-----
Segment/Lane:	1800 1800	1800 1800	1800 1800	1800 1800
Adj/Segment:	1.00 1.00	1.00 0.97	1.06 0.97	0.97 1.06
Lanes:	1.00 0.38	0.62 0.00	0.00 0.00	1.00 1.00
Final Sat.:	1800 675	1125 0	0 0	1750 1900
Capacity Analysis Module:	-----	-----	-----	-----
Vol/Sat:	0.19 0.03	0.00 0.00	0.00 0.00	0.35 0.07
Crit Moves:	****			
Green Time:	31.4 31.4	31.4 0.0	0.0 0.0	59.6 59.6
Volume/Cap:	0.60 0.10	0.10 0.00	0.00 0.00	0.60 0.12
Delay/Veh:	23.1 18.5	18.5 0.0	0.0 0.0	10.2 6.7
Delay Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
ProgrAdj/Prtr:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
Adj/Veh:	23.1 18.5	18.5 0.0	0.0 0.0	10.2 6.7
Desimmove:	1.3 1	1 0	0 0	0.15 3
				0.20 6

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PM Peak

Level Of Service Computation Report
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PM 2013 Project Alt. 1

Signal=Protect/Rights=Include

Lanes: 2 0 2 0 0
Initial Vol: 141*** 321 0

approach:	North Bound			South Bound			East Bound			West Bound		
	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
movement :	-	-	-	-	-	-	-	-	-	-	-	-
In. Green:	7	10	0	0	10	10	0	0	0	0	10	10
Volume Module:	-	-	-	-	-	-	-	-	-	-	-	-
base Vol.:	141	321	0	0	879	300	0	0	0	120	241	376
growth Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
initial Bse:	141	321	0	0	879	300	0	0	0	120	241	376
sidied Vol.:	0	0	0	0	0	0	0	0	0	0	0	0
passerByVol:	0	0	0	0	0	0	0	0	0	0	0	0
initial Put:	141	321	0	0	879	300	0	0	0	120	241	376
per Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
IfF Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
IfF Volume:	141	321	0	0	879	300	0	0	0	120	241	376
product Vol.:	0	0	0	0	0	0	0	0	0	0	0	0
reduced Vol.:	141	321	0	0	879	300	0	0	0	120	241	376
reAdj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
IfF Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
final Vol.:	141	321	0	0	879	300	0	0	0	120	241	376
Saturation Flow Module:	-	-	-	-	-	-	-	-	-	-	-	-
at/lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
adjustment:	0.88	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97	1.06	0.97	1.06
lanes:	2.00	2.00	0.00	0.00	3.00	1.00	0.00	0.00	0.00	1.00	2.00	1.00
initial Sat.:	3.150	3.800	0	0	5.700	1.750	0	0	0	1.750	3.800	1.750
Spacity Analysis Module:	-	-	-	-	-	-	-	-	-	-	-	-
spaci/Sat:	0.04	0.08	0.00	0.00	0.15	0.17	0.00	0.00	0.00	0.07	0.06	0.21
spaci Mores:	***	***	***	***	***	***	***	***	***	***	***	***
run Time:	7.9	38.1	0.0	0.0	30.2	30.2	0.0	0.0	0.0	37.9	37.9	37.9
slume/Cap:	0.48	0.19	0.00	0.00	0.43	0.48	0.00	0.00	0.00	0.15	0.14	0.48
slay/Veh:	28.8	10.7	0.0	0.0	16.0	16.7	0.0	0.0	0.0	10.7	10.6	13.0
slay Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
rogAdj/rot:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
slayDel/Veh:	28.8	10.7	0.0	0.0	16.0	16.7	0.0	0.0	0.0	10.7	10.6	13.0
simonone.	6	9	0	0	28	10.7	0.0	0.0	0.0	3	6	10

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Lanes:	2	0	2	0	0
Initial Vol:	165***	524	0	0	
Signal=Protect/Rights-Include					
North Bound	South Bound	East Bound	West Bound		
L - T - R	L - T - R	L - T - R	L - T - R		
10 0 0 10 10 0 0 0 10 10 10	----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----		
321 0 0 879 300 0 0 0 120 241 376	----- ----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----		
1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17	----- ----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----		
376 0 0 1030 352 0 0 0 141 283 441	----- ----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----		
16 0 0 58 50 0 0 0 0 0 0	----- ----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----		
132 0 0 381 210 0 0 25 81 148 227	----- ----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----		
524 0 0 1469 612 0 0 25 0 222 431 668	----- ----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----		
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	----- ----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----		
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	----- ----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----		
524 0 0 1469 612 0 0 25 0 222 431 668	----- ----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----		
Module:					
0.14 0.00 0.00 0.26 0.35 0.00 xxxx 0.00 0.13 0.11 0.38	----- ----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----		
40.0 0.0 0.0 0.33 0.30 0.0 0.0 0.0 36.0 36.0 36.0	----- ----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----		
0.29 0.00 0.00 0.66 0.90 0.00 xxxx 0.00 0.30 0.27 0.90	----- ----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----		
10.5 0.0 0.0 0.16 0.29 0.0 0.0 0.0 12.4 12.4 12.4	----- ----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----		
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	----- ----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----		
10.5 0.0 0.0 0.16 0.29 0.0 0.0 0.0 12.4 12.4 12.4	----- ----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----		
14.0 0.0 0.0 0.46 19 0 0 0 6 12 27.5	----- ----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- -----		

Level Of Service Computation Report
985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

The figure displays two traffic signal configurations side-by-side. The left configuration, labeled "Signal=Protect/Rights=Include", shows a single green arrow pointing right through all four lanes. The right configuration, labeled "Signal=Split Rights=Includ", shows a green arrow pointing right in the top lane, while the bottom lane has a red arrow pointing left and a green arrow pointing right.

Initial Vol:	Lanes:	Vol Cnt	Date:	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):
612***	1 0	1469	n/a	85	9	0.877	28.8	19.4
		3					0	0
		0					2	431
		0					0	666**

Lanes:	2	0	2	0	0
Initial Vol:	165***	524	0	0	0
Signal=Protect/Rights-Include					
North Bound	South Bound	East Bound	West Bound		
L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
- -	- -	- -	- -	- -	- -
10 0 0 10 0 0 10 0 0 10 10 10					
321 0 0 879 300 0 0 120 241 376					
1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17					
376 0 0 1030 352 0 0 141 283 441					
16 0 0 58 50 0 0 0 0 0					
132 0 0 381 210 0 25 81 148 227					
524 0 0 1469 612 0 25 0 222 431 668					
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00					
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00					
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00					
524 0 0 1469 612 0 25 0 222 431 668					
Module:					
1800 1800 1800 1800 1800 1800 1800 1800 1800 1800					
1.06 0.97 0.97 1.06 0.97 0.97 1.06 0.97 0.97 1.06					
2.00 0.00 0.00 3.00 1.00 0.00 0.00 0.00 1.00 2.00					
3800 0 0 5700 1750 0 0 0 1750 3800 1750					
0.14 0.00 0.00 0.26 0.35 0.00 ***** 0.00 0.13 0.11 0.38					
40.0 0.0 0.0 0.33 0.33 0.0 0.0 0.0 36.0 36.0 36.0					
0.29 0.00 0.00 0.66 0.66 0.90 0.00 0.00 0.30 0.27 0.90					
10.5 0.0 0.0 0.16 0.16 0.8 29.4 0.0 0.0 12.4 12.4 12.4					
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00					
10.5 0.0 0.0 0.16 0.16 0.8 29.4 0.0 0.0 12.4 12.4 12.4					
14.0 0.0 0.0 0.46 0.46 19.0 0.0 0.0 0.0 6.12 27.5					

Level Of Service Computation Report
 1985 HCM Operations (Future Volume Alternative)
 PM 2013 Project Alt. 3

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM Peak

small=Protect/Brights=Include

Initial Vol: 718*** Lanes: 1 0 0 0

Signal=Protect/Rights=Include

Initial Vol: 718*** Lanes: 1 0 0 0

Signal=Split Lanes: Rights=Includ

Initial Vol: 718*** Lanes: 1 0 0 0

Signal=Split Lanes: Rights=Includ

Initial Vol: 718*** Lanes: 1 0 0 0

Signal=Split Lanes: Rights=Includ

Initial Vol: 718*** Lanes: 1 0 0 0

Signal=Split Lanes: Rights=Includ

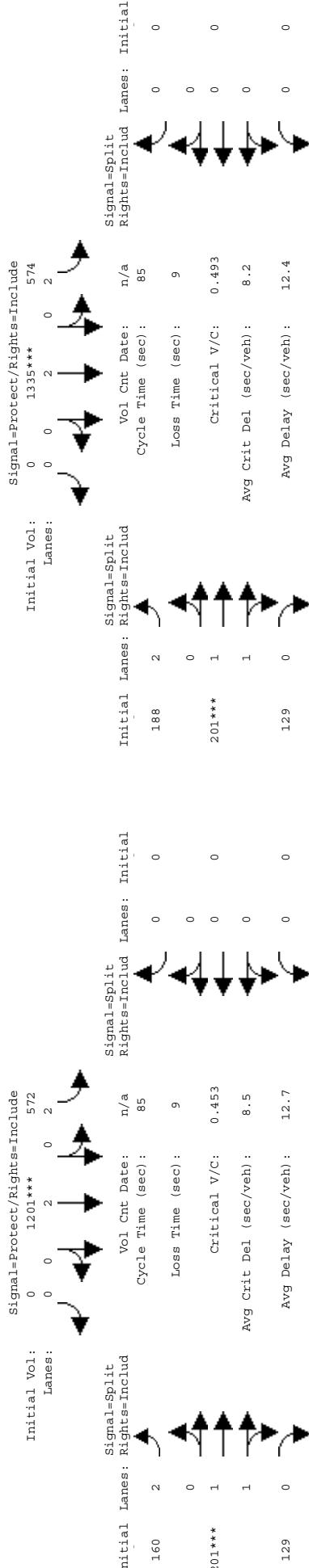
	Vol	Cnt	Date:	n/a
Cycle Time (sec):	1592	3		85
Loss Time (sec):				9
Critical V/C:				0.9448
Avg Crit Del (sec/veh):				39.6
Avg Delay (sec/veh):				22.9

Lanes: 2 0 2 0 0
Initial Vol: 165***

approach:	North Bound			South Bound			East Bound		
	L - T	- R	L - T	- R	L - T	- R	L - T	- R	
movement:	-	-	-	-	-	-	-	-	-
n.n. Green:	7	10	0	0	10	10	0	0	0
Module:	-	-	-	-	-	-	-	-	-
Pipeline Module:	-	-	-	-	-	-	-	-	-
Issue Vol:	141	321	1	0	879	300	0	0	0
Downstream Adj:	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17
Upstream Adj:	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17
Initial Bse:	165	376	0	0	1030	352	0	0	0
Unidided Vol:	0	76	0	0	181	156	0	0	0
Approved Fut:	0	132	0	0	381	210	0	25	0
Initial Fut:	165	584	0	0	1592	718	0	25	0
Upper Vol Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lower Vol Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
IFP Volume:	165	584	0	0	1592	718	0	25	0
Produced Vol:	0	0	0	0	0	0	0	0	0
Produced Vol:	165	584	0	0	1592	718	0	25	0
IFP Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
IFP Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	165	584	0	0	1592	718	0	25	0
Infrastructure Flow Module:	-	-	-	-	-	-	-	-	-
Lane/lnane:	1800	1800	1800	1800	1800	1800	1800	1800	1800
Injusment:	0.88	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97
Lane Sat.:	2.00	2.00	0.0	0.0	3.00	1.00	0.0	0.0	0.0
Final Sat.:	3150	3800	0	0	5700	1750	0	0	0
Opacity Analysis Module:	-	-	-	-	-	-	-	-	-
Lane Sat.:	0.05	0.15	0.00	0.00	0.28	0.41	0.00	xxxxx	0.00
Bit Moves:	****								
Initial Time:	7.0	42.6	0.0	0.0	35.6	35.6	0.0	0.0	0.0
Volume/Cap:	0.64	0.31	0.00	0.00	0.67	0.98	0.00	xxxxx	0.00
Lane/Veh:	32.2	9.5	0.0	0.0	15.7	39.7	0.0	0.0	0.0
Lane Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane/Veh:	32.2	9.5	0.0	0.0	15.7	39.7	0.0	0.0	0.0

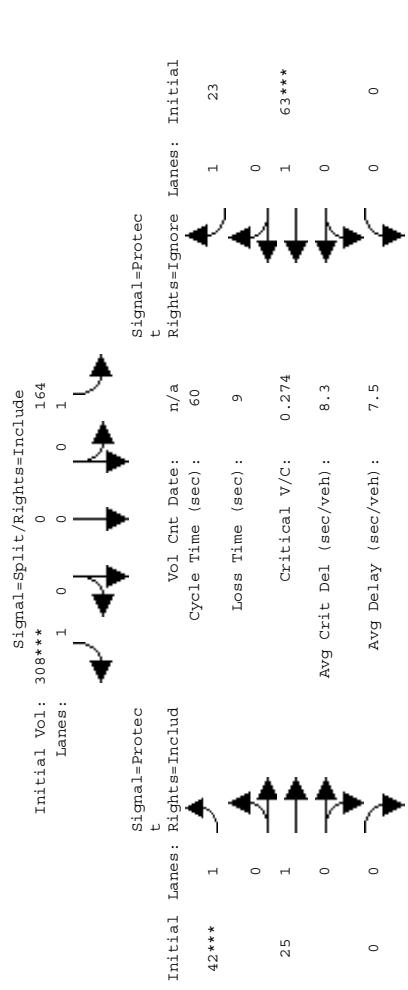
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

Level Of Service Computation Report
85 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 3

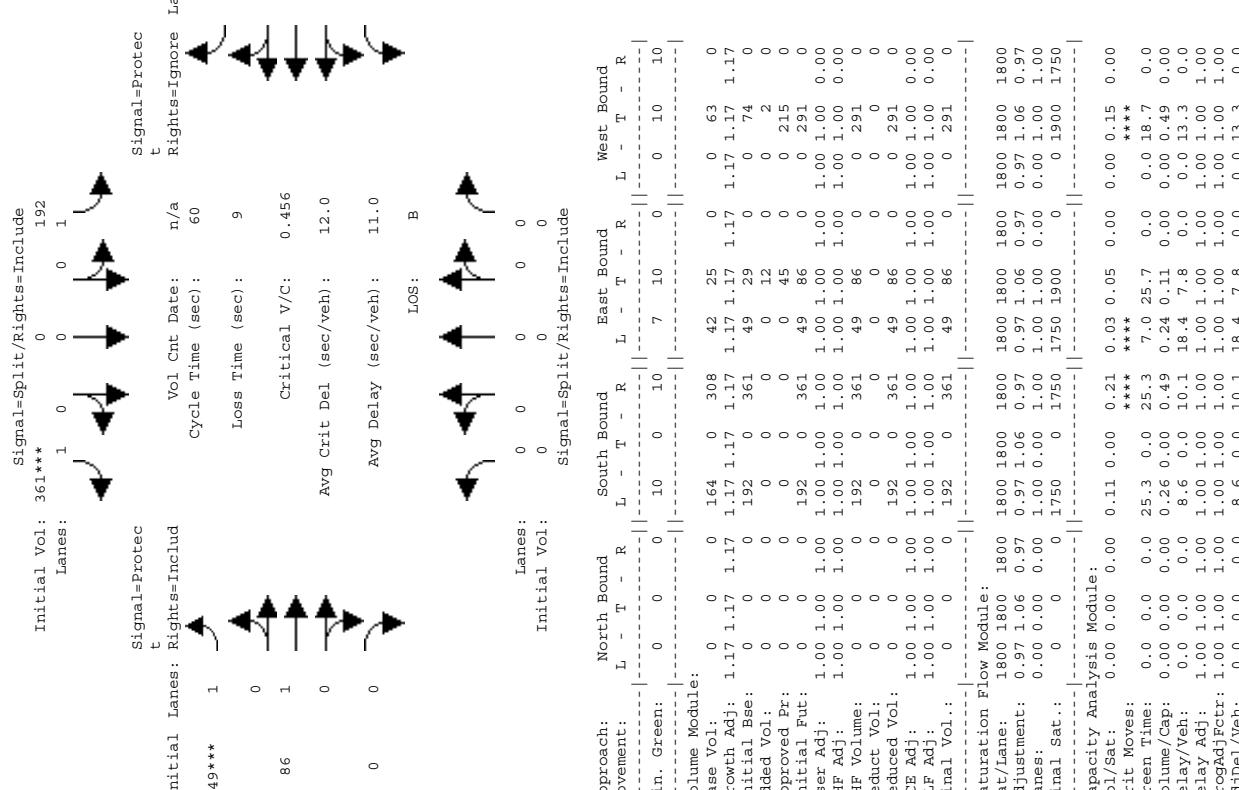


Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM Peak

Intersection #15: Manila/H St.
Intersection #15: Manila/H St.
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1



Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	0 0 0 0	10 0 10 0	7 10 0 10	0 10 10 0
Volume Module:				
Base Vol:	0 0 0 0	164 1 0 0	308 42 25 0	63 23
Growth Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Bee:	0 0 0 0	164 0 0	308 42 25 0	63 23
Added Vol:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
PasserByVol:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
Initial Fut:	0 0 0 0	164 0 0	308 42 25 0	63 23
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Volume:	0 0 0 0	164 0	308 42 25 0	63 0
Reduced Vol:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
Reduced Vol:	0 0 0 0	164 0	308 42 25 0	63 0
PCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
MLF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Vol.:	0 0 0 0	164 0	308 42 25 0	63 0
Saturation Flow Module:				
Sat/Lane:	1800 1800 1800 1800 1800 1800	1800 1800 1800 1800 1800 1800	1800 1800 1800 1800 1800 1800	1800 1800 1800 1800 1800 1800
Adjustment:	0.971.06 0.97	1.06 0.97 1.06	0.97 1.06 0.97	1.06 0.97 1.06
Lanes:	0.00 0.00 0.00 1.00 0.00 1.00	1.00 1.00 1.00 0.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00	0.00 0.00 0.00 1.00 0.00 1.00
Final Sat.:	0 0 0 0 0 0	1750 0 1750 1750 1900 0	0 1900 1750 1750 1900 0	0 1750 1750 1900 0 0
Capacity Analysis Module:				
Vol/Sat:	0.00 0.00 0.00 0.09 0.00 0.00	0.18 0.02 0.01 0.00 0.03 0.00	****	****
Crit Moves:	0.0 0.0 0.0 0.0 0.0 0.0	34.0 0.0 0.0 0.0 0.0 0.0	0.97 1.06 0.97 1.06 0.97 1.06	0.97 1.06 0.97 1.06 0.97 1.06
Green Time:	0.0 0.0 0.0 0.0 0.0 0.0	7.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0
Volume/Cap:	0.00 0.00 0.00 0.17 0.00 0.31	0.21 0.05 0.00 0.00 0.20 0.00	0.97 1.06 0.97 1.06 0.97 1.06	0.97 1.06 0.97 1.06 0.97 1.06
Delay/Veh:	0.0 0.0 0.0 0.47 0.0 0.53	18.3 11.9 0.0 0.0 16.4 0.0	0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0
Delay Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
ProgAdjFcrr:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
AddJl/Veh:	0.0 0.0 0.0 4.7 0.0 5.3	13.1 11.9 0.0 0.0 16.4 0.0	0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0
DesignQueue:	0 0 0 2 0 5	1 1 1 0 2 0	0 0 0 0 0 0	0 0 0 0 0 0



Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 3

Level Of Service Computation Report 985 HCM Operations (Future Volume Alternative) PM Peak

	Signal=Split/Rights=Include									
Lanes:	0	0	0	0	0	0	0	0	0	0
Initial Vol:	0	0	0	0	0	0	0	0	0	0
Approach:	North Bound	South Bound	East Bound	West Bound						
movement:	L - T - R	L - T - R	L - T - R	L - T - R						
in Green:	0 0 0	0 10 0	7 10 0	0 10 10						
Volume Module:										
Arrive Vol:	0 0 0	164 0	308 42	25 0	63 0					
Through Adj:	1.17 1.17 1.17	1.17 1.17 1.17	1.17 1.17 1.17	1.17 1.17 1.17	1.17 1.17 1.17					
Initial Bse:	0 0 0	192 0	361 49	29 0	74 0					
Added Vol:	0 0 0	0 0 0	49 14	36 0	8 0					
Approved Pr:	0 0 0	0 0 0	0 45	0 0	215 0					
Initial Fut:	0 0 0	192 0	410 63	110 0	297 0					
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00					
HF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00					
HF Volume:	0 0 0	192 0	410 63	110 0	297 0					
Reduced Vol:	0 0 0	0 0 0	0 0	0 0	0 0					
Reduced Vol:	0 0 0	192 0	410 63	110 0	297 0					
CEC Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00					
HF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00					
Final Vol.:	0 0 0	192 0	410 63	110 0	297 0					
Attraction Flow Module:										
at Lane:	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800					
adjustment:	0.97 1.06 0.97	0.97 1.06 0.97	0.97 1.06 0.97	0.97 1.06 0.97	0.97 1.06 0.97					
Vol/Cap:	0.00 0.00 0.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00					
Vol/Veh:	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00					
Final Sat.:	0 0 0	1750 0	1750 1750	1900 0	0 1900	1750 0				
Apacifity Analysis Module:										
Roll/Sat:	0.00 0.00 0.00	0.11 0.00	0.23 0.04	0.06 0.00	0.00 0.00	0.16 0.00				
Metric Moves:			****							
GreenTime:	0.0 0.0 0.0	26.4 0.0	26.4 7.0	24.6 0.0	0.0 0.0	17.6 0.0				
Volume/Cap:	0.00 0.00 0.00	0.25 0.00	0.53 0.31	0.14 0.00	0.00 0.00	0.53 0.00				
RelayAdj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00					
RoadAdj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00					
Neh:	0.00 0.00 0.00	8.1 0.0	9.9 18.7	8.4 0.0	0.0 0.0	14.3 0.0				

Level Of Service Computation Report 985 HCM Operations (Future Volume Alternative) PM Peak

Signal=Protect/Rights=Include

Initial Vol:	Lanes:	Vol Cnt	Date:	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):	LOS:
0	0	2204 ***	n/a	110	9	0.447	5.8	10.9	B
169	1	0				0	0	0	
169	1	0				0	0	0	
169	1	0				0	0	0	

Signal=Split Rights=Includ Lanes: Init_

Signal=Split Rights=Overla Lan

Initial Vol: Lanes: Signal=Split Rights=Overla Lan

Initial Vol: Lanes: Signal=Split Rights=Overla Lan

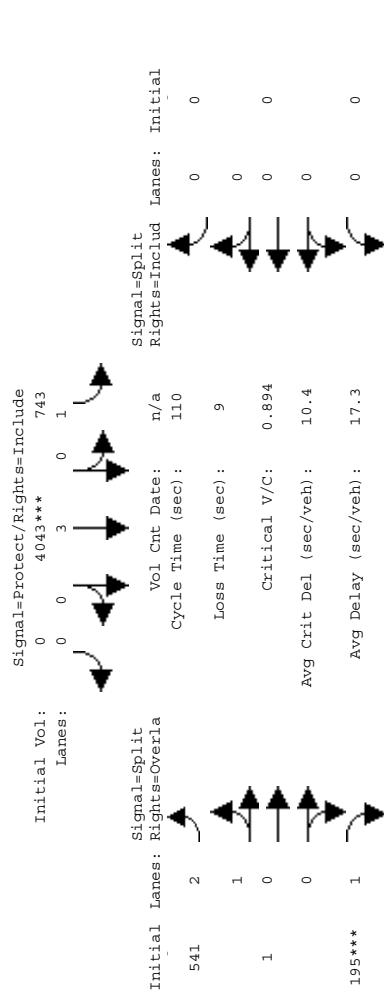
Initial Vol.:	0***	373	535	Signal=Protect/Rights=Ignore
Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	0 10 10	7 10 0	7 10 0	0 0 0
Volume Module:	- - - -	- - - -	- - - -	- - - -
Base Vol.:	0 373	535 169 2204	116 1 158 0 0	0 0 0 0
Growth Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00
Initial Base:	0 373	535 169 2204	0 116 1 158 0 0	0 0 0 0
Added Vol.:	0 0 0	0 0 0	0 0 0	0 0 0
PasserByVol.:	0 0 0	0 0 0	0 0 0	0 0 0
Initial Fut.:	0 373	535 169 2204	0 116 1 158 0 0	0 0 0 0
User Adj.:	1.00 1.00 0.00	1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00
PHF Adj.:	1.00 1.00 0.00	1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00
PHF Volume.:	0 373	0 169 2204	0 116 1 158 0 0	0 0 0 0
Reduced Vol.:	0 0 0	0 0 0	0 0 0	0 0 0
Reduced Vol.:	0 373	0 169 2204	0 116 1 158 0 0	0 0 0 0
PCE Adj.:	1.00 1.00 0.00	1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00
MLF Adj.:	1.00 1.00 0.00	1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00
Final Vol.:	0 373	0 169 2204	0 116 1 158 0 0	0 0 0 0
Saturation Flow Module:	- - - -	- - - -	- - - -	- - - -
Sat/Lane:	1800 1800 1800	1800 1800 1800	1800 1800 1800 1800	1800 1800 1800
Adjustment:	0.97 1.06 0.97	0.97 1.06 0.97	0.92 1.00 0.97 0.97 1.06	0.97 1.06 0.97 0.97
Lanes:	0.0 5.00 1.00	5.00 1.00 5.00	0.0 2.98 0.02 1.00 0.00 0.00	0.0 0.0 0.0 0.0 0.0 0.0
Final Sat.:	0 9500 1750	1750 5700 0	4907 42 1750 0 0	0 0 0 0 0 0
Capacity Analysis Module:	- - - -	- - - -	- - - -	- - - -
Vol/Sat.:	0.00 0.04 0.00	0.00 0.10 0.39	0.00 0.02 0.02 0.09 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00
Crit Moves:	*****	*****	*****	*****
Green Time:	0.0 10.0 0.0	0.0 71.9 18.2	0.0 19.1 19.1 19.1 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0
Volume/Cap:	0.00 0.43 0.00	0.00 0.15 0.52	0.00 0.14 0.14 0.52 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00
Delay/Veh:	0.0 36.2 0.0	0.0 5.6 4.5	0.0 29.2 29.2 32.7 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0
DelayAdj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00
ProgAdj/Fctr:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00
AddDelVehn:	0.0 36.2 0.0	0.0 5.6 4.5	0.0 29.2 29.2 32.7 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0
DesimOneVeh:	0.0 21 0.0	0.0 4.4 3.8	0.0 6 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 3

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)

Intersection #16: 237 EB Ramps/Mathilda



Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	0 10 10	0 7 10	0 7 10	0 7 10
Volume Module:	0 373 0	169 2204	0 116 1 158	0 116 1 158
Base Vol:	0 1.17 1.17	1.17 1.17 1.17	1.17 1.17 1.17	1.17 1.17 1.17
Growth Adj:	0 1.17 1.17	1.17 1.17 1.17	1.17 1.17 1.17	1.17 1.17 1.17
Initial Bee:	0 437 0	198 2554	0 136 1 185	0 198 2584
Added Vol:	0 1 0	5 8	0 0 0	0 56 69
Approved Pr:	0 327 0	1451 0	0 405 0	0 405 0
Initial Fut:	0 765 114	743 4043	0 541 1 195	0 782 114
User Adj:	1.00 1.00 0.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Adj:	1.00 1.00 0.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Volume:	0 765 0	743 4043	0 541 1 195	0 782 0
Reduc Vol:	0 0 0	0 0 0	0 0 0	0 0 0
Reduced Vol:	0 765 0	743 4043	0 541 1 195	0 782 0
PCE Adj:	1.00 1.00 0.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
MLF Adj:	1.00 1.00 0.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Vol.:	0 765 0	743 4043	0 541 1 195	0 782 0
Saturation Flow Module:	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800
Sat/Lane:	0.97 1.06 0.97	0.97 1.06 0.97	0.97 1.06 0.97	0.97 1.06 0.97
Adjustment:	0.00 5.00 1.00	1.00 3.00 0.00	2.99 0.01 1.00	0.00 0.00 0.00
Lanes:	0 9500 1750	1750 5700	0 4941 9	0 4941 9
Final Sat.:	0 43 0	15 63	0 30 0	11 0 0
Capacity Analysis Module:	0.00 0.08 0.00	0.42 0.71 0.00	0.11 0.11 0.00	0.45 0.72 0.00
Vol/Sat:	0 ***	***	0 ***	0.11 0.11 0.00
Crit Moves:	0.0 10.0 0.0	77.3 87.3 0.0	13.7 13.7 0.0	77.2 87.2 0.0
Green Time:	0.0 0.89 0.00	0.60 0.89 0.00	0.88 0.88 0.00	0.65 0.91 0.00
Volume/Cap:	0.00 0.89 0.00	0.60 0.89 0.00	0.88 0.88 0.00	0.91 0.91 0.00
Delay/Veh:	0.0 45.4 0.0	7.0 8.1 0.0	45.6 45.6 0.0	7.6 8.7 0.0
Delay Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
ProgAdjFcrt:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
AddDel/Veh:	0.0 45.4 0.0	7.0 8.1 0.0	45.6 45.6 0.0	7.6 8.7 0.0
DesInqueue:	0 43 0	15 63	0 30 0	11 0 0
Designqueue:	0 44 0	16 64	0 31 0	11 0 0

Intersection #16: 237 EB Ramps/Mathilda

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	0 10 10	0 7 10	0 7 10	0 7 10
Volume Module:	0 373 0	169 2204	0 116 1 158	0 116 1 158
Base Vol:	0 1.17 1.17	1.17 1.17 1.17	1.17 1.17 1.17	1.17 1.17 1.17
Growth Adj:	0 1.17 1.17	1.17 1.17 1.17	1.17 1.17 1.17	1.17 1.17 1.17
Initial Bee:	0 437 0	198 2554	0 136 1 185	0 198 2584
Added Vol:	0 1 0	5 8	0 0 0	0 56 69
Approved Pr:	0 327 0	1451 0	0 405 0	0 405 0
Initial Fut:	0 765 114	743 4043	0 541 1 195	0 782 114
User Adj:	1.00 1.00 0.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Adj:	1.00 1.00 0.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Volume:	0 765 0	743 4043	0 541 1 195	0 782 0
Reduc Vol:	0 0 0	0 0 0	0 0 0	0 0 0
Reduced Vol:	0 765 0	743 4043	0 541 1 195	0 782 0
PCE Adj:	1.00 1.00 0.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
MLF Adj:	1.00 1.00 0.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Vol.:	0 765 0	743 4043	0 541 1 195	0 782 0
Saturation Flow Module:	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800
Sat/Lane:	0.97 1.06 0.97	0.97 1.06 0.97	0.97 1.06 0.97	0.97 1.06 0.97
Adjustment:	0.00 5.00 1.00	1.00 3.00 0.00	2.99 0.01 1.00	0.00 0.00 0.00
Lanes:	0 9500 1750	1750 5700	0 4941 9	0 4941 9
Final Sat.:	0 43 0	15 63	0 30 0	11 0 0
Capacity Analysis Module:	0.00 0.08 0.00	0.42 0.71 0.00	0.11 0.11 0.00	0.45 0.72 0.00
Vol/Sat:	0 ***	***	0 ***	0.11 0.11 0.00
Crit Moves:	0.0 10.0 0.0	77.3 87.3 0.0	13.7 13.7 0.0	77.2 87.2 0.0
Green Time:	0.0 0.89 0.00	0.60 0.89 0.00	0.88 0.88 0.00	0.91 0.91 0.00
Volume/Cap:	0.00 0.89 0.00	0.60 0.89 0.00	0.88 0.88 0.00	0.91 0.91 0.00
Delay/Veh:	0.0 45.4 0.0	7.0 8.1 0.0	45.6 45.6 0.0	7.6 8.7 0.0
Delay Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
ProgAdjFcrt:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
AddDel/Veh:	0.0 45.4 0.0	7.0 8.1 0.0	45.6 45.6 0.0	7.6 8.7 0.0
DesInqueue:	0 43 0	15 63	0 30 0	11 0 0
Designqueue:	0 44 0	16 64	0 31 0	11 0 0

Intersection #16: 237 EB Ramps/Mathilda

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	0 10 10	0 7 10	0 7 10	0 7 10
Volume Module:	0 373 0	169 2204	0 116 1 158	0 116 1 158
Base Vol:	0 1.17 1.17	1.17 1.17 1.17	1.17 1.17 1.17	1.17 1.17 1.17
Growth Adj:	0 1.17 1.17	1.17 1.17 1.17	1.17 1.17 1.17	1.17 1.17 1.17
Initial Bee:	0 437 0	198 2554	0 136 1 185	0 198 2584
Added Vol:	0 1 0	5 8	0 0 0	0 56 69
Approved Pr:	0 327 0	1451 0	0 405 0	0 405 0
Initial Fut:	0 765 114	743 4043	0 541 1 195	0 782 114
User Adj:	1.00 1.00 0.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Adj:	1.00 1.00 0.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Volume:	0 765 0	743 4043	0 541 1 195	0 782 0
Reduc Vol:	0 0 0	0 0 0	0 0 0	0 0 0
Reduced Vol:	0 765 0	743 4043	0 541 1 195	0 782 0
PCE Adj:	1.00 1.00 0.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
MLF Adj:	1.00 1.00 0.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Vol.:	0 765 0	743 4043	0 541 1 195	0 782 0
Saturation Flow Module:	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800
Sat/Lane:	0.97 1.06 0.97	0.97 1.06 0.97	0.97 1.06 0.97	0.97 1.06 0.97
Adjustment:	0.00 5.00 1.00	1.00 3.00 0.00	2.99 0.01 1.00	0.00 0.00 0.00
Lanes:	0 9500 1750	1750 5700	0 4941 9	0 4941 9
Final Sat.:	0 43 0	15 63	0 30 0	11 0 0
Capacity Analysis Module:	0.00 0.08 0.00	0.42 0.71 0.00	0.11 0.11 0.00	0.45 0.72 0.00
Vol/Sat:	0 ***	***	0 ***	0.11 0.11 0.00
Crit Moves:	0.0 10.0 0.0	77.3 87.3 0.0	13.7 13.7 0.0	77.2 87.2 0.0
Green Time:	0.0 0.89 0.00	0.60 0.89 0.00	0.88 0.88 0.00	0.91 0.91 0.00
Volume/Cap:	0.00 0.89 0.00	0.60 0.89 0.00	0.88 0.88 0.00	0.91 0.91 0.00
Delay/Veh:	0.0 45.4 0.0	7.0 8.1 0.0	45.6 45.6 0.0	7.6 8.7 0.0
Delay Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
ProgAdjFcrt:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
AddDel/Veh:	0.0 45.4 0.0	7.0 8.1 0.0	45.6 45.6 0.0	7.6 8.7 0.0
DesInqueue:	0 43 0	15 63	0 30 0	11 0 0
Designqueue:	0 44 0	16 64	0 31 0	11 0 0

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985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 3

THE ZODIAC IN JEWISH ASTRONOMY: 7

Signal	Lanes	Initial Vol	Rights=Overla	Rights=Includ	Critical V/C	Avg Crit Del (sec/veh)	Avg Delay (sec/veh)
Protect	0	34	18	1	n/a	1.474	339.3
Protect+Rights=Includ	1	4476***	60	1	11.0	401.4	784***
Protect+Rights=Exclud	2	266	0	0	12.0	0	120
	3	0	0	0	73	0	831***

Approach:	North Bound	South Bound	East Bound	West Bound
Initial Vol:	527***	2 0	2	1 0
Initial Vol:	527***	690	94	Signal=Protect/Right=Include
Approach:	L - T - R	L - T - R	L - T - R	L - T - R
Initial Vol:	7 10	7 10	7 10	7 10
Initial Vol:	7 10	7 10	7 10	7 10
Volume Module:	- - - - -	- - - - -	- - - - -	- - - - -
Baseline Vol:	368 11	55 4	894 29	15 51
Growth Adj:	1.17 1.17	1.17 1.17	1.17 1.17	1.17 1.17
Initial Base:	431 13	64 5	1048 34	18 60
Added Vol:	2 0	0 0	0 0	12 0
Approved Pr:	94 677	30 261	3428 0	0 0
Initial Future:	527 690	94 266	4476 34	18 60
User Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
HFE Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
HFE Volume:	527 690	94 266	4476 34	18 60
Reduced Vol:	0 0	0 0	0 0	0 0
Reduced Vol:	527 690	94 266	4476 34	18 60
CEC Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
MULF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
Final Vol:	527 690	94 266	4476 34	18 60
Saturation Flow Module:	- - - - -	- - - - -	- - - - -	- - - - -
Sat/Lane:	1800 1800	1800 1800	1800 1800	1800 1800
Adjustment:	0.88 1.04	1.00 0.97	1.04 1.00	0.97 1.06
Lanes:	2 2.63	0.37 1.00	3.97 0.03	1.00 1.00
Final Sat.:	3150 4938	671 1750	7443 57	1750 1900

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The diagram illustrates two traffic signal configurations for a four-lane intersection. The left configuration, labeled "Signal=Protect/Rights=Include", shows a green arrow for the top-left lane and a red arrow for the bottom-right lane. The right configuration, labeled "Signal=Protect/Rights=Includ", shows a green arrow for the top-left lane and a red arrow for the bottom-left lane. Arrows indicate the direction of traffic flow through each lane.

Parameter	Value (Signal=Protect/Rights=Include)	Value (Signal=Protect/Rights=Includ)
Initial Vol:	34	60
Lanes:	0 1 3 0 1	18 1 0 1 0
Loss Time (sec):	n/a	12
Critical V/C:	1.513	1.513
Avg Crit Del (sec/veh):	452.3	452.3
Avg Delay (sec/veh):	381.5	831.5**
Signal=Protect Rights=Overla	4632***	8088***
Signal=Protect Rights=Includ	266	2

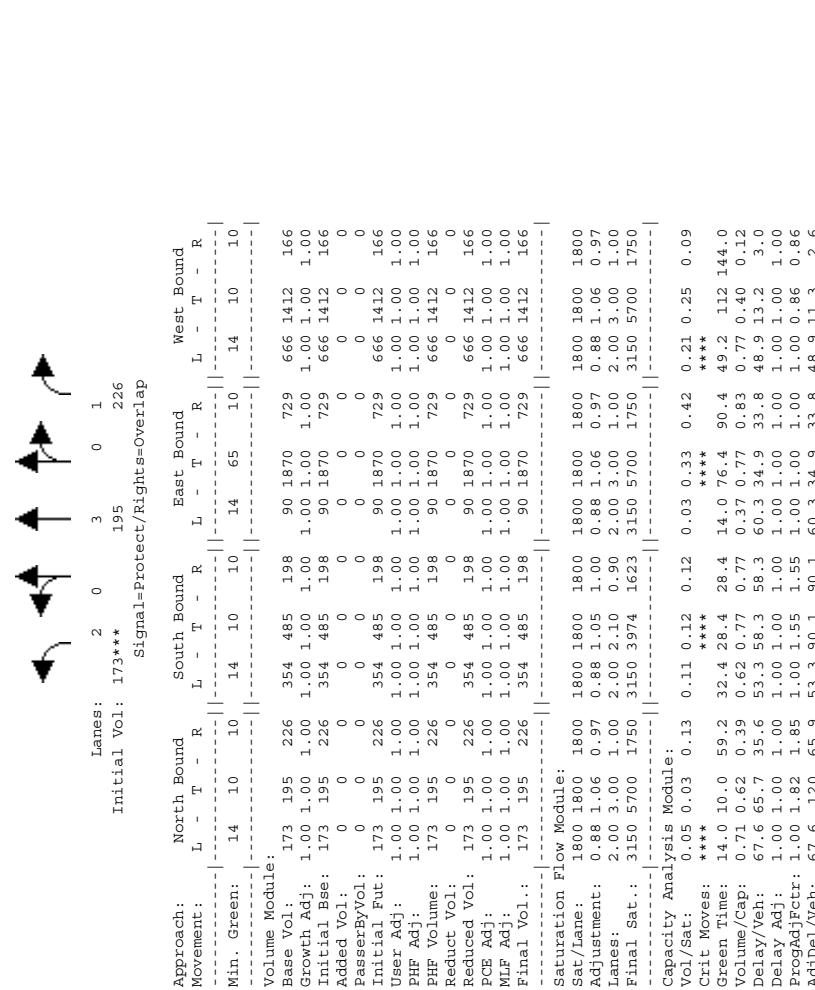
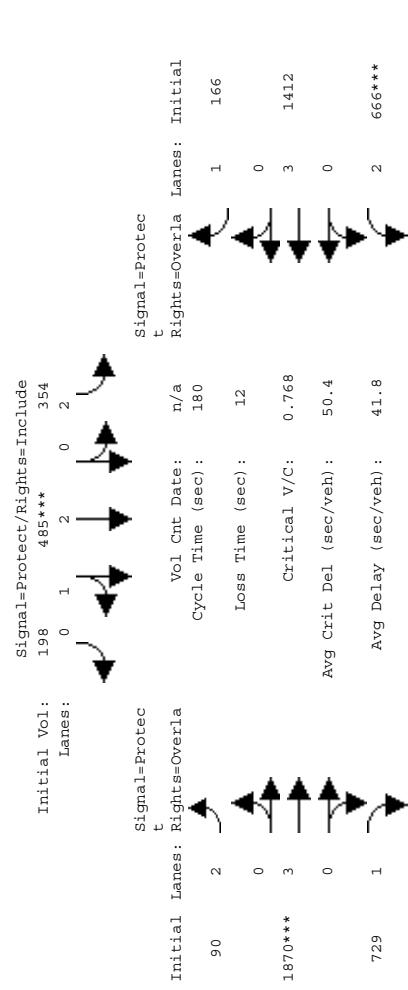
Initial Vol.: 533*** Sat/Vol=Protect/Rights=Include												
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	West Bound		
Min. Green:	- 7 10	- 10	- 7 10	- 10	- 7 10	- 10	- 7 10	- 10	- 7 10	- 10		
Volume Module:	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -		
Basis Vol:	368	11	55	4	89%	29	15	51	40%	570	102	17
Growth Adj:	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17
Initial Bee:	431	13	64	5	104%	34	18	60	47%	668	120	20
Added Vol:	8	45	0	0	156%	0	0	0	36%	0	0	0
Approved Pr:	94	677	30	261	342%	0	0	0	302%	163	0	53
Initial Fut:	533	735	94	266	463%	34	18	60	80%	831	120	73
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	533	735	94	266	463%	34	18	60	80%	831	120	73
Reducit Vol:	-	-	-	0	0	0	0	0	0	0	0	0
Reduced Vol:	533	735	94	266	463%	34	18	60	80%	831	120	73
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	533	735	94	266	463%	34	18	60	80%	831	120	73
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.04	0.97	1.04	1.00	0.97	1.06	0.97	1.06	0.97	1.00	1.00
Lanes:	2.00	2.65	0.35	1.00	3.97	0.03	1.00	1.00	1.00	2.00	0.62	0.38
Final Sat.:	3150	1964	635	1750	7445	55	1750	1900	1750	3150	1119	681

Capacity Analysis Module:									
Vol/Sat:	0.117	0.15	0.15	0.62	0.62	0.01	0.03	0.46	0.26
Crit/Moves:	****			****				****	0.11
Green/Time:	12.3	28.4	28.4	29.2	45.2	45.2	7.0	21.3	33.6
Volume/Cap:	0.51	0.57	0.57	0.57	1.51	1.51	0.16	0.16	19.2
Delay/Veh:	470.6	27.4	27.4	27.9	44.7	44.7	37.1	28.1	460.2
Delay/Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdj/Fctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AddDel/Veh:	470.6	27.4	27.4	27.9	44.7	44.7	37.1	28.1	460.2

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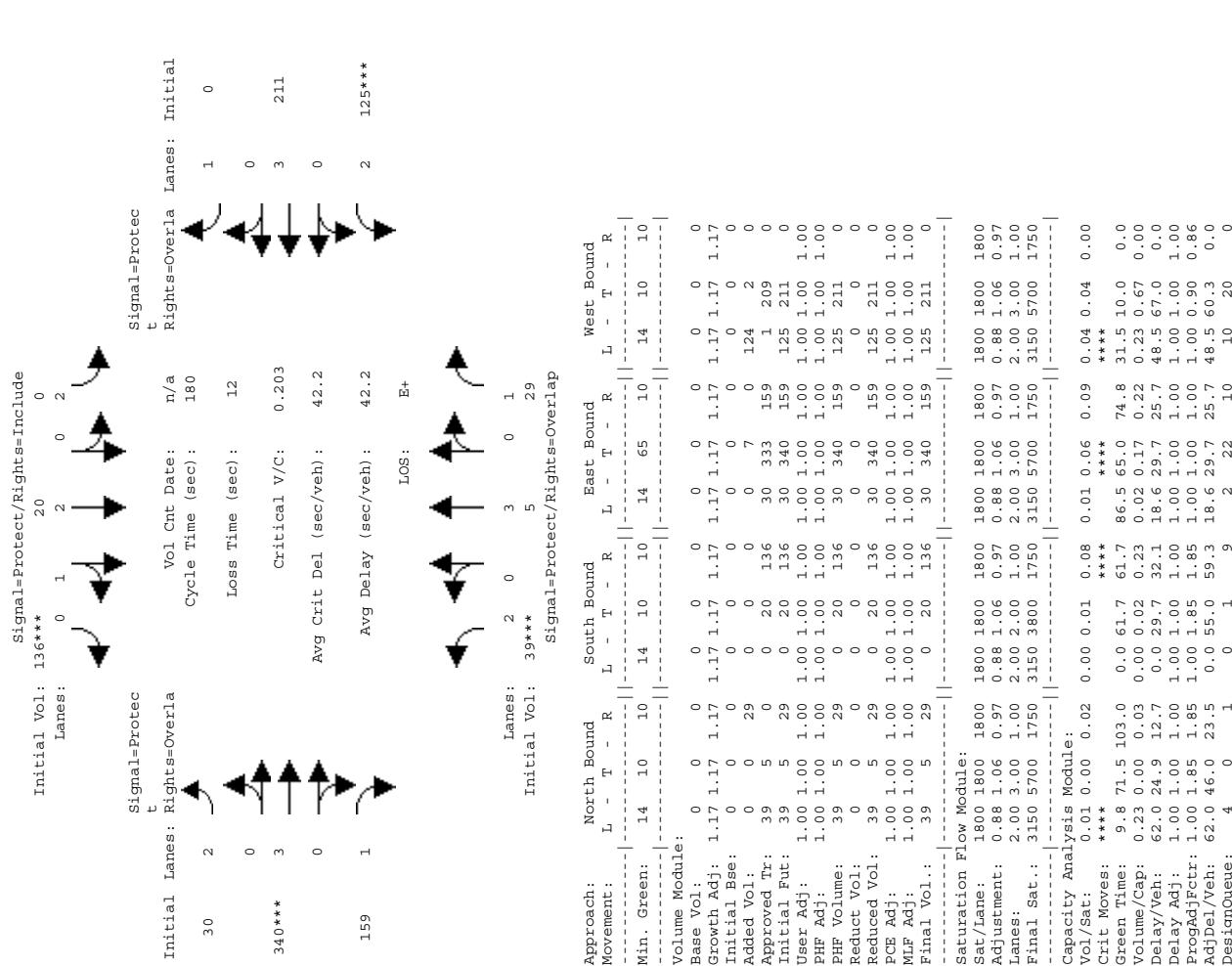
Intersection #19: Central/Mary
Intersection #19: Central/Mary

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Intersection #19: Central/Mary



A P P E N D I X B 8

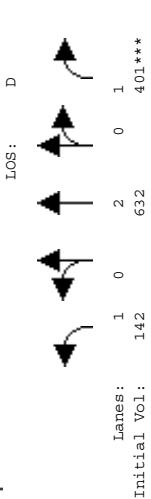
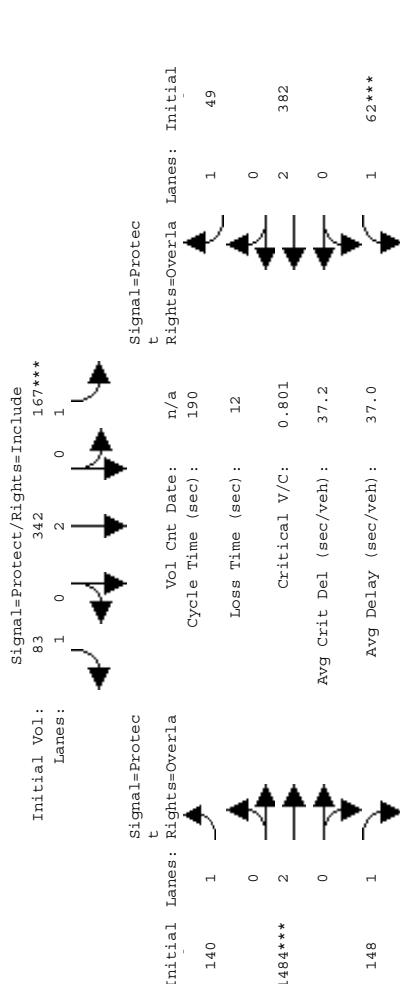
LEVEL OF SERVICE CALCULATIONS:
ALTERNATIVE 4



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AM 2013 Project Alt. 1

Intersection #1: Middlefield/Shoreline

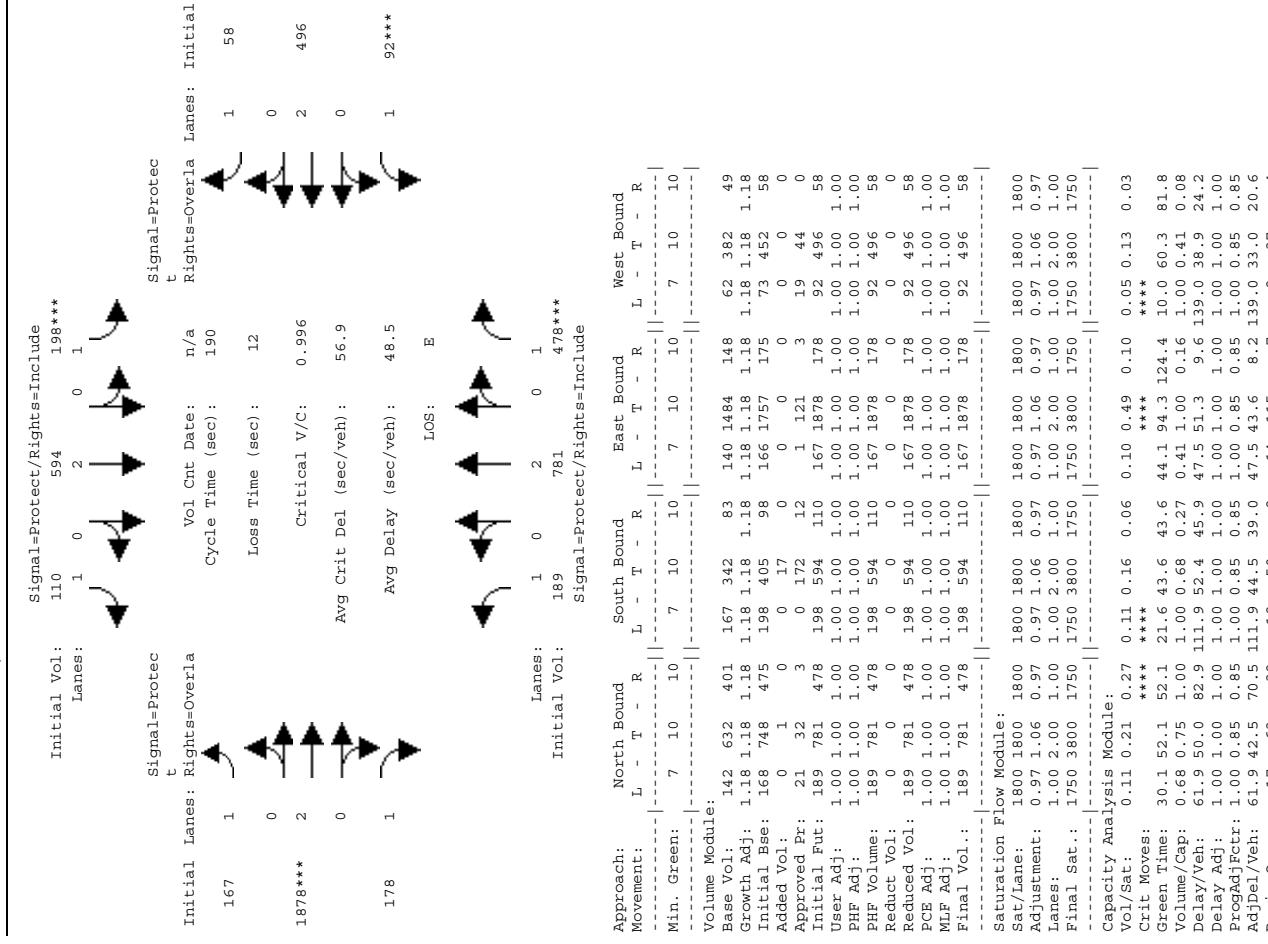


Capacity Analysis Module:
Vol/Sat: 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800
Adjustment: 0.97 1.06 0.97 1.06 0.97 1.06 0.97 1.06 0.97 1.06 0.97 1.06 0.97
Lanes: 1.00 2.00 1.00 2.00 1.00 2.00 1.00 2.00 1.00 2.00 1.00 2.00 1.00
Final Sat.: 1750 3800 1750 3800 1750 3800 1750 3800 1750 3800 1750 3800 1750

Saturation Flow Module:
Sat/Lane: 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800
Adjustment: 0.97 1.06 0.97 1.06 0.97 1.06 0.97 1.06 0.97 1.06 0.97 1.06 0.97
Lanes: 1.00 2.00 1.00 2.00 1.00 2.00 1.00 2.00 1.00 2.00 1.00 2.00 1.00
Final Sat.: 1750 3800 1750 3800 1750 3800 1750 3800 1750 3800 1750 3800 1750

Capacity Analysis Module:
Vol/Sat: 0.11 0.21 0.27 0.11 0.16 0.06 0.10 0.49 0.10 0.05 0.13 0.03
Crit Moves: ***** 52.1 21.6 43.6 43.6 44.1 94.3 124.4 10.0 60.3 81.8
Green Time: 30.1 52.1 52.1 21.6 43.6 43.6 44.1 94.3 124.4 10.0 60.3 81.8
Volume/Cap: 0.68 0.75 1.00 1.00 0.68 0.27 0.41 1.00 0.16 1.00 0.41 0.08
Delay/Veh: 62.9 111.9 52.4 47.5 51.3 45.9 51.3 9.6 139.0 38.9 24.2
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
ProgAdjFctr: 1.00 0.85 0.85 1.00 0.85 1.00 0.85 1.00 0.85 1.00 0.85 1.00 0.85
AdjDel/Veh: 61.9 42.5 70.5 111.9 44.5 39.0 47.5 13.6 8.2 139.0 33.0 20.6
DesgnQueue: 17 63 39 19 50 9 14 115 7 9 37 4

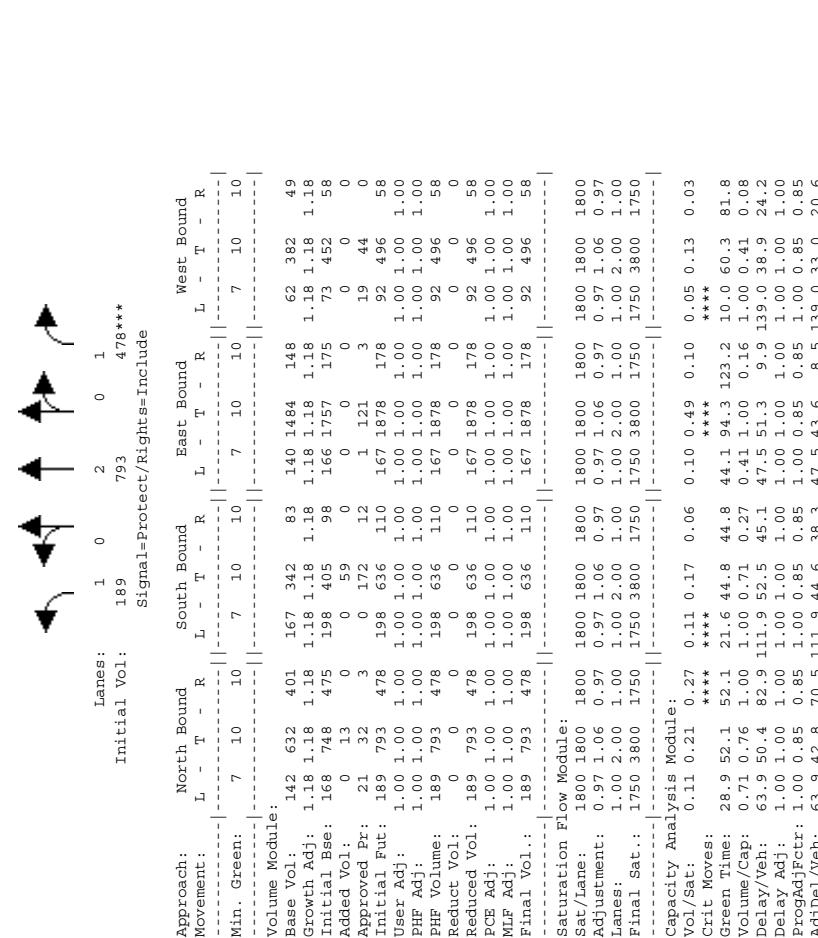
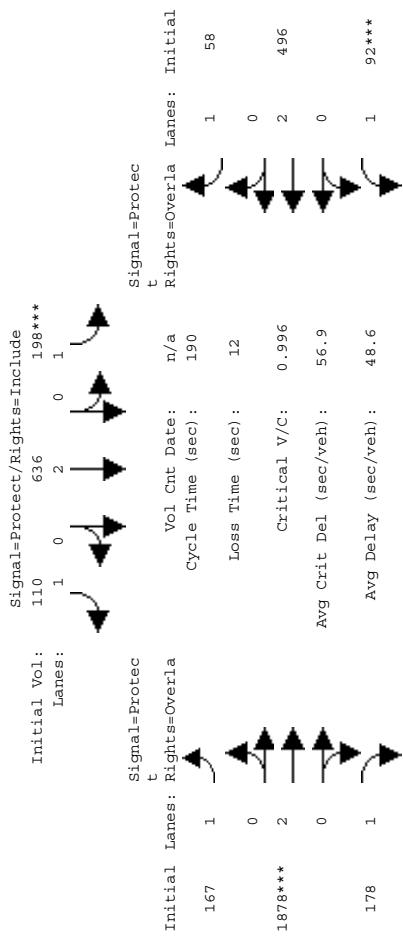
Intersection #1: Middlefield/Shoreline



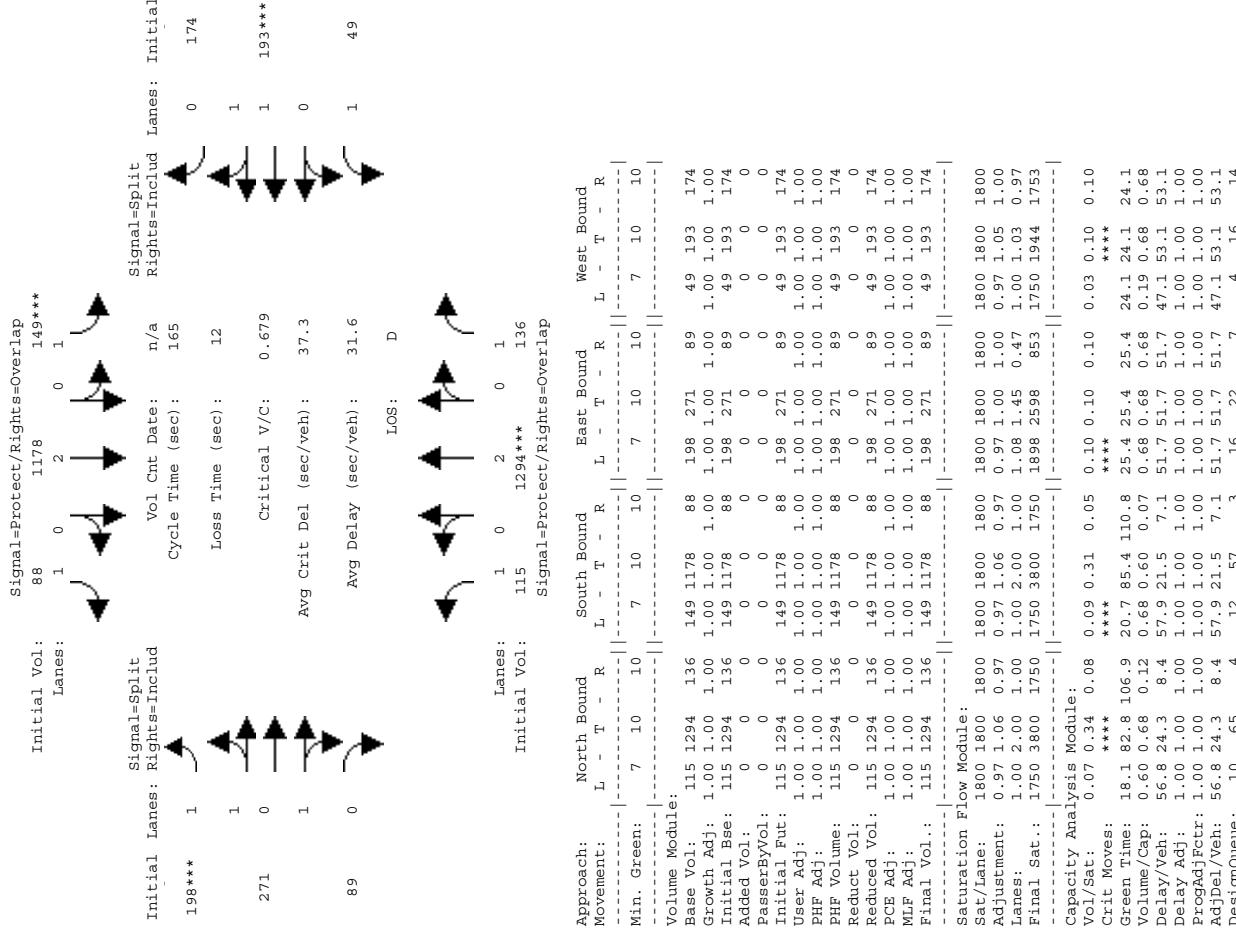
Level Of Service Computation Report
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Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM Peak

Intersection #1: Middlefield/Shoreline



Intersection #2: Moffett/Central Expressway



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Intersection #2: Moffett/Central Expressway

Intersection #2: Moffett/Central Expressway

Signal=Protect/Rights=Overlap											
Initial Vol:	129	Vol Cnt Date:	n/a	Lanes:	1 0 2 0 1	Initial Lanes:	214***	Initial Rights=Includ	0	Initial Signal=Split	230***
Cycle Time (sec):	165	Loss Time (sec):	12	Critical V/C:	0.949	Avg Crit Del (sec/veh):	55.3	543***	0	Critical V/C:	1.017
Approach:	North Bound	South Bound	East Bound	West Bound	Approach:	North Bound	South Bound	East Bound	West Bound		
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	Movement:	L - T - R	L - T - R	L - T - R	L - T - R		
Min. Green:	14 10 10	14 10 10	14 10 10	14 10 10	Min. Green:	14 10 10	14 10 10	14 10 10	14 10 10		
Volume Module:	115 1294	136 149 1178	88 198 271	89 49 193	Volume Module:	115 1294	136 149 1178	88 198 271	89 49 193		
Base Vol:	1 18 1 18	1 18 1 18	1 18 1 18	1 18 1 18	Base Vol:	1 18 1 18	1 18 1 18	1 18 1 18	1 18 1 18		
Growth Adj:	1 18 1 18	1 18 1 18	1 18 1 18	1 18 1 18	Growth Adj:	1 18 1 18	1 18 1 18	1 18 1 18	1 18 1 18		
Initial Bee:	136 1532	161 176 1395	104 234 321	105 58 228	Initial Bee:	136 1532	161 176 1395	104 234 321	105 58 228		
Added Vol:	0 0	2 17 0	0 41 0	4 1	Added Vol:	0 0	20 59 0	0 147 0	5 33 13		
Approved Pr:	36 122 0	37 353 25	4 75 89	80 7	Approved Pr:	36 122 0	37 353 25	4 75 89	0 80 7		
Initial Fut:	172 1654	163 230 1748	129 238 437	194 58 312	Initial Fut:	172 1654	181 272 1748	129 238 543	194 63 341		
User Adj:	1 00 1 00	1 00 1 00	1 00 1 00	1 00 1 00	User Adj:	1 00 1 00	1 00 1 00	1 00 1 00	1 00 1 00		
PHF Adj:	1 00 1 00	1 00 1 00	1 00 1 00	1 00 1 00	PHF Adj:	1 00 1 00	1 00 1 00	1 00 1 00	1 00 1 00		
PHF Volume:	172 1654	163 230 1748	129 238 437	194 58 312	PHF Volume:	172 1654	181 272 1748	129 238 543	194 63 341		
Reducit Vol:	0 0	0 0	0 0	0 0	Reducit Vol:	0 0	0 0	0 0	0 0		
Reduced Vol:	172 1654	163 230 1748	129 238 437	194 58 312	Reduced Vol:	172 1654	181 272 1748	129 238 543	194 63 341		
PCE Adj:	1 00 1 00	1 00 1 00	1 00 1 00	1 00 1 00	PCE Adj:	1 00 1 00	1 00 1 00	1 00 1 00	1 00 1 00		
MLF Adj:	1 00 1 00	1 00 1 00	1 00 1 00	1 00 1 00	MLF Adj:	1 00 1 00	1 00 1 00	1 00 1 00	1 00 1 00		
Final Vol.:	172 1654	163 230 1748	129 238 437	194 58 312	Final Vol.:	172 1654	181 272 1748	129 238 543	194 63 341		
Saturation Flow Module:	1800 1800	1800 1800	1800 1800	1800 1800	Saturation Flow Module:	1800 1800	1800 1800	1800 1800	1800 1800		
Vol/Lane:	0.97 1.06	0.97 1.06	0.97 1.04	1.00 0.95	Vol/Lane:	0.97 1.06	0.97 1.04	0.97 1.04	1.00 0.95		
Adjustment:	0.97 2.00	1.00 2.00	1.00 1.37	0.63 1.16	Adjustment:	0.97 2.00	1.00 2.00	1.00 1.46	0.54 1.00		
Lanes:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	Lanes:	1.00 1.00	1.00 1.00	1.00 1.00	0.82 1.00		
Final Sat.:	1750 3800	1750 3800	1750 2562	1137 1750 2194	Final Sat.:	1750 3800	1750 3800	1750 2725	974 1750 2224		
Capacity Analysis Module:	0.10 0.44 0.09	0.13 0.46 0.07	0.14 0.17 0.17	0.03 0.14 0.14	Capacity Analysis Module:	0.10 0.44 0.10	0.16 0.46 0.07	0.14 0.20 0.20	0.20 0.04 0.15		
Crit Moves:	*****	*****	*****	*****	Crit Moves:	*****	*****	*****	*****		
Green Time:	174 75.7 100.5	22.9 81.2 110.9	29.7 29.7	24.7 24.7	Green Time:	16.9 70.6	95.5 25.2 78.9 111.3	32.3 32.3	24.9 24.9		
Volume/Cap:	0.93 0.95 0.15	0.95 0.93 0.11	0.76 0.95	0.22 0.95	Volume/Cap:	0.96 1.02	0.18 1.02 0.96	0.11 0.69 1.02	0.24 1.02 1.02		
Delay/Veh:	8.9 9.41 1.05	85.3 36.8 7.3	50.9 64.4	46.9 71.8	Delay/Veh:	97.2 57.6	12.4 100.6 41.4	7.2 48.0 77.2	47.0 87.2 87.2		
Delay Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	Delay Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00		
ProgAdjFcrt:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	ProgAdjFcrt:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00		
AddDel/Veh:	89.9 41.1 10.6	85.3 36.8 7.3	50.9 64.4	46.9 71.8	AddDel/Veh:	97.2 57.6	12.4 100.6 41.4	7.2 48.0 77.2	47.0 87.2 87.2		
DesInqueue:	14 93 6	19 93 4	19 34 15	17 25 17	DesInqueue:	15 98 7	22 95 4	18 42 15	28 18		

Level Of Service Computation Report
HCM Operations (Future Volume Alternative)
AM Peak

Level Of Service Computation Report
 5 HCM Operations (Future Volume Alternative)
 AM 2013 Project Alt. 1

[Intersection #3: Moffett/Middlefield

The figure displays four rows of traffic signal timing diagrams, each row representing a different traffic scenario. Each diagram shows a 3-lane intersection with signal phases for North, South, East, and West directions. The diagrams illustrate various signal timing parameters such as Vol Cnt, Cycle Time, Loss Time, Critical V/C, Avg Crit Del, Avg Delay, LOS, and Signal=Protect/Rights=Include.

Row 1:

- Initial Vol: 181 Lanes: 0 1 1 0 1
- Vol Cnt: 375 Rights=Includ
- Cycle Time (sec): 9/1/99
- Loss Time (sec): 12
- Critical V/C: 0.731
- Avg Crit Del (sec/veh): 26.9
- Avg Delay (sec/veh): 27.0
- LOS: D+
- Signal=Protect/Rights=Include: 145***

Row 2:

- Initial Vol: 206 Lanes: 0 1 1 0 1
- Vol Cnt: 375 Rights=Includ
- Cycle Time (sec): 9/1/99
- Loss Time (sec): 100
- Critical V/C: 0.731
- Avg Crit Del (sec/veh): 26.9
- Avg Delay (sec/veh): 27.0
- LOS: D+
- Signal=Protect/Rights=Include: 189***

Row 3:

- Initial Vol: 770*** Lanes: 1 0 1 0 1
- Vol Cnt: 375 Rights=Includ
- Cycle Time (sec): 9/1/99
- Loss Time (sec): 1
- Critical V/C: 1
- Avg Crit Del (sec/veh): 500
- Avg Delay (sec/veh): 1
- LOS: D+
- Signal=Protect/Rights=Include: 976***

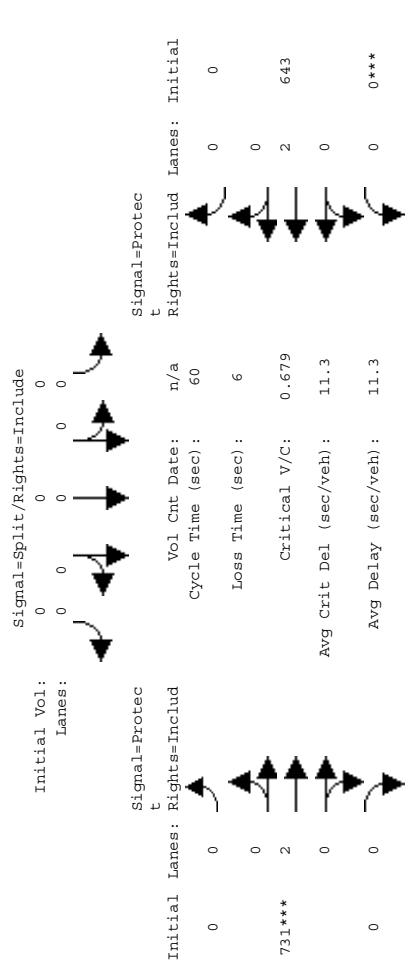
Row 4:

- Initial Vol: 175 Lanes: 0 1 1 0 1
- Vol Cnt: 375 Rights=Includ
- Cycle Time (sec): 9/1/99
- Loss Time (sec): 1
- Critical V/C: 1
- Avg Crit Del (sec/veh): 147***
- Avg Delay (sec/veh): 1
- LOS: D+
- Signal=Protect/Rights=Include: 176***

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
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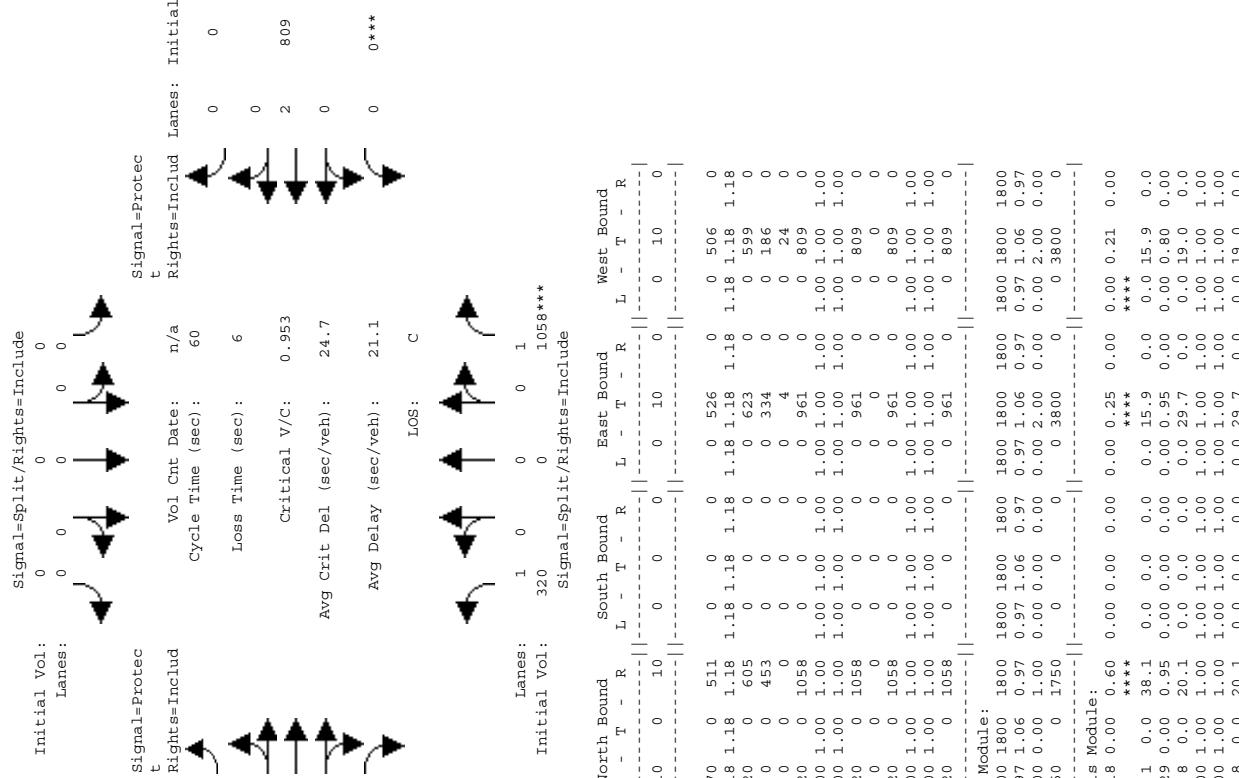
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 4

Intersection #4: Moffett/85 NB Ramp



Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	10 0 10 0	0 0 10 0	0 0 10 0	0 0 10 0
Volume Module:				
Base Vol:	270 0	511 0	526 0	506 0
Growth Adj:	1.18 1.18	1.18 1.18	1.18 1.18	1.18 1.18
Initial Bee:	320 0	605 0	623 0	599 0
Added Vol:	0 0	0 0	0 0	0 0
Approved Pr:	0 0	0 0	0 0	0 0
Initial Fut:	320 0	732 0	731 0	643 0
User Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Volume:	320 0	732 0	731 0	643 0
Reduced Vol:	0 0	0 0	0 0	0 0
Reduced Vol:	320 0	732 0	731 0	643 0
PCE Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
MLF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
Final Vol.:	320 0	732 0	731 0	643 0
Saturation Flow Module:				
Sat/Lane:	1800 1800	1800 1800	1800 1800	1800 1800
Adjustment:	0.97 1.06	0.97 1.06	0.97 1.06	0.97 1.06
Lanes:	1.00 0.00	1.00 0.00	0.00 2.00	0.00 2.00
Final Sat.:	1750 0	1750 0	0 3800	0 3800
Capacity Analysis Module:				
Vol/Sat:	0.18 0.00	0.42 0.00	0.00 0.19	0.00 0.17
Crit Moves:	*****	*****	*****	*****
Green Time:	37.0 0.0	37.0 0.0	0.0 0.17.0	0.0 0.17.0
Volume/Cap:	0.30 0.00	0.68 0.00	0.00 0.68	0.00 0.60
Delay/Veh:	1.42 0.0	7.0 0.0	0.0 1.57	0.0 1.48
Delay Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
ProgAdjFcrr:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
AddJl/Veh:	4.2 0.0	7.0 0.0	0.0 15.7	0.0 14.8
DesignQueue:	4 0	10 0	0 0 15.7	0 0 16.0

Intersection #4: Moffett/85 NB Ramp



Level Of Service Computation Report
1997 HCM 4-Way Stop (Future Volume Alternative)
AM Peak

Level Of Service Computation Report
 9997 HCM 4-Way Stop (Future Volume Alternative)
 AM 2013 Project Alt. 1

[Intersection #7: Moffett-C]ark/Moffett Extension

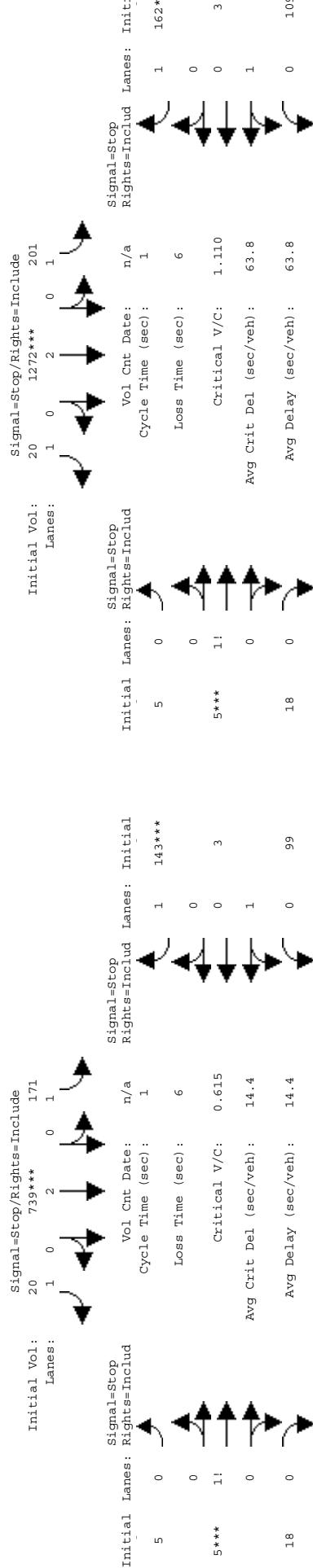


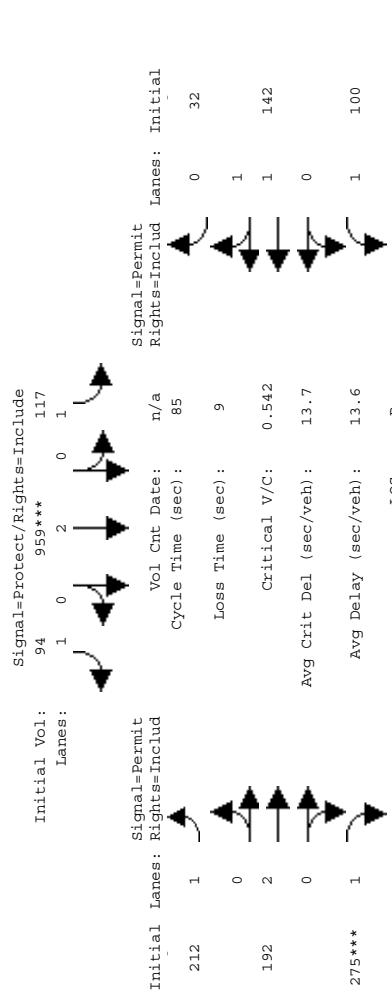
Diagram illustrating traffic flow configurations for a four-lane road (B) and a modified four-lane road (F). The top section shows a standard four-lane road (B) with two lanes in each direction. The bottom section shows a modified four-lane road (F) where the rightmost lane in each direction is replaced by a 'Signal-Strong-Right-Incline' structure, indicated by a curved arrow pointing up. The legend indicates:

- LOS:** Lane Occupancy Status
- P:** Primary Lane
- B:** Standard Four-Lane Road
- F:** Modified Four-Lane Road with Signal-Strong-Right-Incline
- Lanes:** Number of lanes per direction (e.g., 3***, 0, 1, 0)
- Initial Vol:** Initial volume (e.g., 139, 49, 171)

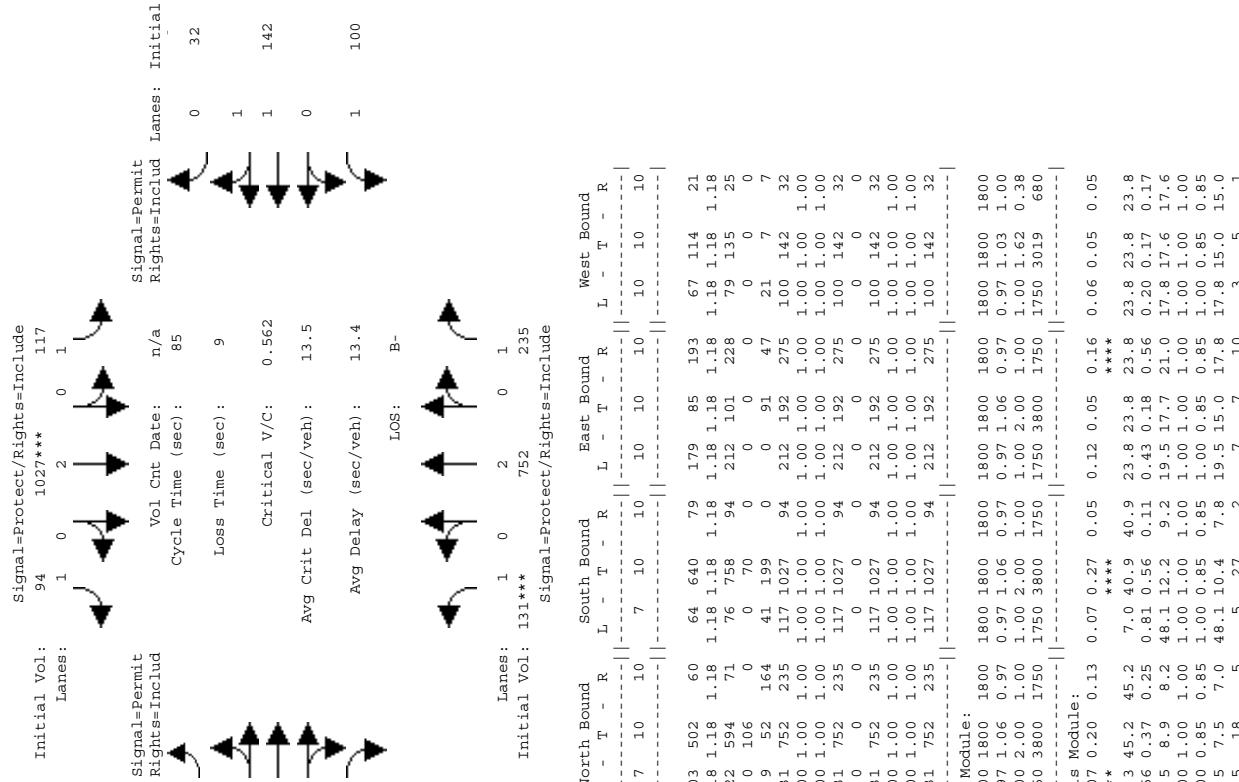
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 4

Intersection #8: Whisman/Middlefield



Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	7 10	7 10	10 10	10 10
Volume Module:				
Base Vol:	103 502	60 64 640	79 179 85	193 67 114
Growth Adj:	1 1.18 1.18	1.18 1.18 1.18	1.18 1.18 1.18	1.18 1.18 1.18
Initial Bee:	122 594	76 758	94 228	79 135
Added Vol:	0 27	0 2	0 0	0 0
Approved Pr:	9 164	41 199	0 91	47 21 7
Initial Fut:	121 673	235 117 959	94 212 192	275 100 142
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Volume:	131 673	235 117 959	94 212 192	275 100 142
Reducit Vol:	0 0	0 0	0 0	0 0
Reduced Vol:	131 673	235 117 959	94 212 192	275 100 142
PCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
MLF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Vol.:	131 673	235 117 959	94 212 192	275 100 142
Saturation Flow Module:				
Sat/Lane:	1800 1800	1800 1800	1800 1800	1800 1800
Adjustment:	0.97 1.06	0.97 1.06	0.97 1.06	0.97 1.06
Lanes:	1.00 2.00	1.00 2.00	1.00 2.00	1.00 2.00
Final Sat.:	1750 3800	1750 3800	1750 3800	1750 3800
Capacity Analysis Module:				
Vol/Sat:	0.07 0.18 0.13	0.07 0.25 0.05	0.12 0.05 0.05	0.16 0.06 0.05
Crit Moves:	*****	*****	*****	*****
Green Time:	11.7 44.3	44.3 7.0	39.6 24.7	24.7 24.7
Volume/Cap:	0.54 0.34	0.26 0.81	0.54 0.12	0.17 0.54
Delay/Veh:	27.8 9.0	8.6 48.1	12.6 18.9	17.2 17.1
ProgAdjFcrt:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
AddDel/Veh:	27.8 7.7	7.3 48.1	10.7 18.9	14.5 17.2
Desgnqueue:	5 16	5 5	26 5	27 5



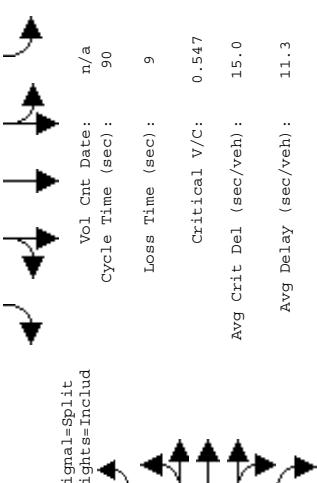
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM Peak

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1

Intersection #9: Ellis/Middlefield

Signal=Protect/Rights=Include

Initial Vol: 0 673 227***
Lanes: 0 0 2 0 1



Initial Vol: 0 0 709*** 394
Lanes: 0 10 7 10 0 0 0 0

Signal=Protect/Rights=Overlap

Approach: L - T - R South Bound L - T - R East Bound L - T - R West Bound

Min. Green: 0 0 0 0 0 0 0 0

Volume Module:

Base Vol: 0 709 394 227 673 0 0 0 0 204 0 134

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bee: 0 709 394 227 673 0 0 0 0 204 0 134

Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0

PassInitial Fut: 0 0 0 0 0 0 0 0 0 0 0 0

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 0 709 394 227 673 0 0 0 0 204 0 134

Reducit Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 0 709 394 227 673 0 0 0 0 204 0 134

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Final Vol.: 0 709 394 227 673 0 0 0 0 204 0 134

Saturation Flow Module:

Sat/Lane: 1800 1800 1800 1800 1800 1800 1800 1800 1800

Adjustment: 0.97 1.04 1.00 0.97 1.06 0.97 0.88 1.06 0.97

Lanes: 0.00 1.27 0.73 1.00 2.00 0.00 0.00 0.00 1.00

Final Sat.: 0 2377 1321 1750 3800 0 0 0 1750

Capacity Analysis Module:

Vol/Sat: 0.00 0.30 0.30 0.13 0.18 0.00 0.00 0.00 0.06 0.00 0.08

Crit Moves: ****

Green Time: 0.0 49.0 59.7 21.3 70.4 0.0 0.0 0.0 10.6 0.0 32.6

Volume/Cap: 0.00 0.55 0.45 0.55 0.23 0.00 0.00 0.00 0.55 0.00 0.27

Delay/Veh:

0.0 10.3 5.6 24.1 2.0 0.0 0.0 0.0 29.7 0.0 15.4

Delay/Adj:

1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

ProgAdjFcrt:

1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

AddDel/Veh:

0.0 10.3 5.6 24.1 2.0 0.0 0.0 0.0 29.7 0.0 15.4

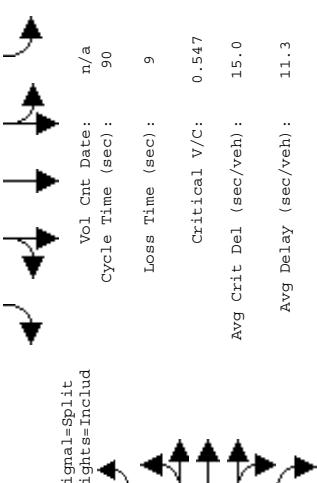
DesInqueue:

0 17 7 9 8 0 0 0 9 0 4

Intersection #9: Ellis/Middlefield

Signal=Protect/Rights=Include

Initial Vol: 0 0 98 350***
Lanes: 0 0 2 0 1



Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Includ

Approach: L - T Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.547

Avg Crit Del (sec/veh): 15.0

Avg Delay (sec/veh): 204****

LOS: B

Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Overlap

Approach: L - T - R Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.933

Avg Crit Del (sec/veh): 29.0

Avg Delay (sec/veh): 21.6

LOS: C

Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Protect/Rights=Overlap

Approach: L - T - R - T - R Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.933

Avg Crit Del (sec/veh): 29.0

Avg Delay (sec/veh): 21.6

LOS: C

Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Overlap

Approach: L - T - R - T - R - T - R Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.933

Avg Crit Del (sec/veh): 29.0

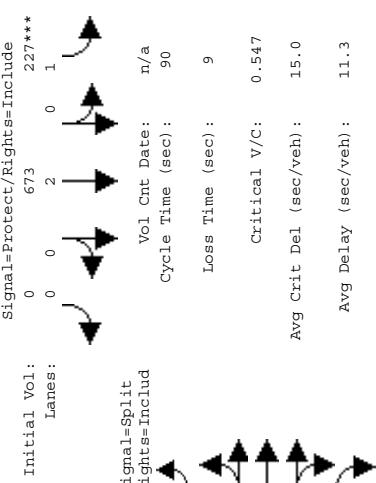
Avg Delay (sec/veh): 21.6

LOS: C

Intersection #9: Ellis/Middlefield

Signal=Protect/Rights=Include

Initial Vol: 0 0 98 350***
Lanes: 0 0 2 0 1



Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Overlap

Approach: L - T Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.547

Avg Crit Del (sec/veh): 15.0

Avg Delay (sec/veh): 204****

LOS: B

Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Overlap

Approach: L - T - R Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.933

Avg Crit Del (sec/veh): 29.0

Avg Delay (sec/veh): 21.6

LOS: C

Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Overlap

Approach: L - T - R - T - R Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.933

Avg Crit Del (sec/veh): 29.0

Avg Delay (sec/veh): 21.6

LOS: C

Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Overlap

Approach: L - T - R - T - R - T - R Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.933

Avg Crit Del (sec/veh): 29.0

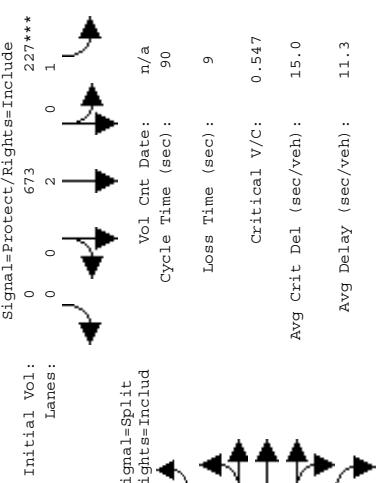
Avg Delay (sec/veh): 21.6

LOS: C

Intersection #9: Ellis/Middlefield

Signal=Protect/Rights=Include

Initial Vol: 0 0 98 350***
Lanes: 0 0 2 0 1



Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Overlap

Approach: L - T Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.547

Avg Crit Del (sec/veh): 15.0

Avg Delay (sec/veh): 204****

LOS: B

Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Overlap

Approach: L - T - R Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.933

Avg Crit Del (sec/veh): 29.0

Avg Delay (sec/veh): 21.6

LOS: C

Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Overlap

Approach: L - T - R - T - R Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.933

Avg Crit Del (sec/veh): 29.0

Avg Delay (sec/veh): 21.6

LOS: C

Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Overlap

Approach: L - T - R - T - R - T - R Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.933

Avg Crit Del (sec/veh): 29.0

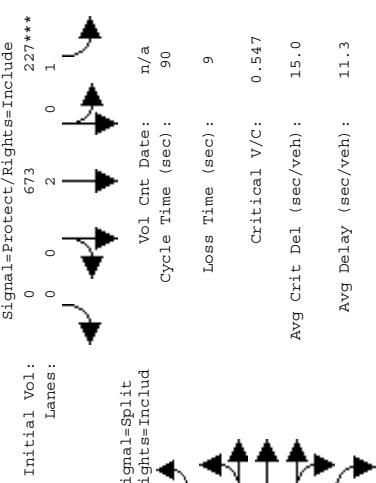
Avg Delay (sec/veh): 21.6

LOS: C

Intersection #9: Ellis/Middlefield

Signal=Protect/Rights=Include

Initial Vol: 0 0 98 350***
Lanes: 0 0 2 0 1



Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Overlap

Approach: L - T Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.547

Avg Crit Del (sec/veh): 15.0

Avg Delay (sec/veh): 204****

LOS: B

Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Overlap

Approach: L - T - R Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.933

Avg Crit Del (sec/veh): 29.0

Avg Delay (sec/veh): 21.6

LOS: C

Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Overlap

Approach: L - T - R - T - R Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.933

Avg Crit Del (sec/veh): 29.0

Avg Delay (sec/veh): 21.6

LOS: C

Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Overlap

Approach: L - T - R - T - R - T - R Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.933

Avg Crit Del (sec/veh): 29.0

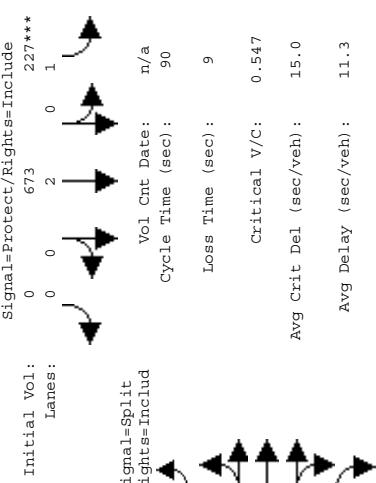
Avg Delay (sec/veh): 21.6

LOS: C

Intersection #9: Ellis/Middlefield

Signal=Protect/Rights=Include

Initial Vol: 0 0 98 350***
Lanes: 0 0 2 0 1



Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Overlap

Approach: L - T Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.547

Avg Crit Del (sec/veh): 15.0

Avg Delay (sec/veh): 204****

LOS: B

Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Overlap

Approach: L - T - R Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.933

Avg Crit Del (sec/veh): 29.0

Avg Delay (sec/veh): 21.6

LOS: C

Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Overlap

Approach: L - T - R - T - R Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.933

Avg Crit Del (sec/veh): 29.0

Avg Delay (sec/veh): 21.6

LOS: C

Initial Vol: 0 0 0 0 98 350***<

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 4

**Level Of Service Computation Report
HCM Operations (Future Volume Alternative)
AM Peak**

Signal=Protect/Rights=Include

Initial Vol:	Lanes:	Vol Cnt Date:	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):
0	0	n/a	90	9	1.013	43.7	32.2
1023	2	383***	1	1	0	0	2
0	1	0	180	0	0	0	465***
383***	1	1	1	1	0	0	

Signal=Split Rights=Includ

Initial Vol:	Lanes:	Vol Cnt Date:	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):
0	0	n/a	90	9	1.013	43.7	32.2
0	0	0	180	0	0	0	2
0	0	0	1	1	0	0	465***
0	0	1	1	1	0	0	

	Lanes:	0	0	1	1	0
Initial Vol.:	0	Signal=Protect/Rights=Overlap	1148***	868		
Approach:	North Bound	South Bound	East Bound	West Bound		
L - T - R	L - T - R	L - T - R	L - T - R			
Initial Base:	0 839 466	0 269 797	0 0 0	0 242 0	159	
Added Vol.:	0 99 178	33 37 0	0 0 0	40 0 0	6	
Approved Pr.:	0 210 224	81 189 0	0 0 0	183 0 0	15	
Initial Fur.:	0 1148 868	383 1023 0	0 0 0	465 0 0	180	
User Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
PHF Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
PHF Volume:	0 1148 868	383 1023 0	0 0 0	465 0 0	180	
Reduced Vol.:	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	
Reduced Vol.:	0 1148 868	383 1023 0	0 0 0	465 0 0	180	
CCE Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
PHF Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
Prinial Vol.:	0 1148 868	383 1023 0	0 0 0	465 0 0	180	

Saturation Flow Module:									
sat/Lane	1800	1800	1800	1800	1800	1800	1800	1800	1800
adjustment:	0.97	1.05	1.00	0.97	1.06	0.97	1.06	0.97	1.06
lanes:	0.00	1.12	0.88	1.00	2.00	0.00	0.00	2.00	0.00
total Sat.:	0	2106	1592	1750	3800	0	0	0	1750

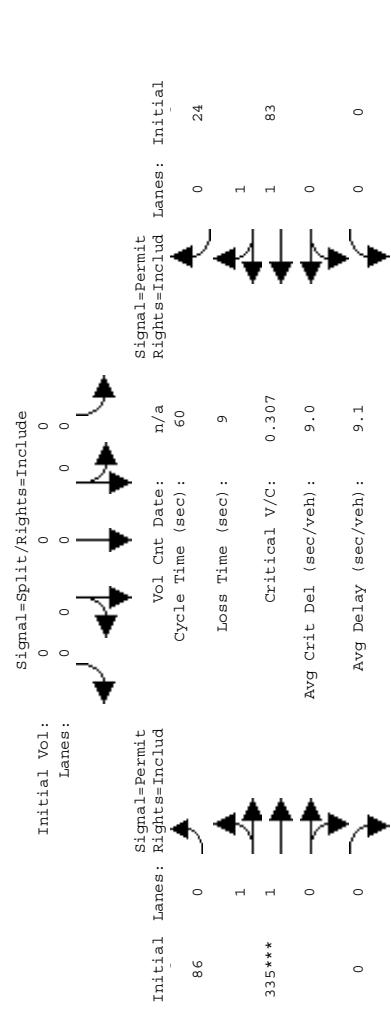
Capacity Analysis Module:									
vol/Sat:	0.00	0.55	0.55	0.22	0.27	0.00	0.00	0.00	0.10
Green Moves:	****							*****	
Green Time:	0.0	48.0	61.6	19.4	67.9	0.0	0.0	0.0	0.0
Volume/Cap:	0.00	1.01	0.80	1.01	0.36	0.00	0.00	0.00	0.28
delay/Veh:	0.0	34.5	8.8	66.0	2.9	0.0	0.0	65.0	0.0
roadAdjFCr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
adjDel/Veh:	0.0	34.5	8.8	66.0	2.9	0.0	0.0	65.0	0.0
signInQueue:	0	31	16	16	14	0	0	0	6

**Level Of Service Computation Report
HCM Operations (Future Volume Alternative)
AM Peak**

	Lanes:	0	0	0	0	0	0	0
	Initial Vol.:	0	0	0	0	0	0	0
	Signal=Permit/Rights=Ignore							
Approach:	North Bound	South Bound	East Bound	West Bound				
Movement:	L - T - R	L - T - R	L - T - R	L - T - R				
Min. Green:	0	0	10	10	0	10	10	0
Volume Module:								
Base Vol.:	0	0	171	1	366	0	255	133
Growth Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	171	1	366	0	255	133
Added Vol.:	0	0	0	0	0	0	0	0
PasserByVol.:	0	0	0	0	0	0	0	0
Initial Fut.:	0	0	171	1	366	0	255	133
User Adj.:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
PHE Adj.:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	171	1	366	0	255	133
Reduced Vol.:	0	0	0	0	0	0	0	0
Reduced Vol.:	0	0	0	0	0	0	0	0
PCE Adj.:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
MLF Adj.:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	171	1	366	0	255	133
Saturation Flow Module:								
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800
Adj/Adjustment:	0.97	1.06	0.97	1.00	0.97	1.06	0.97	1.06
Lanes:	0.00	0.00	0.99	0.01	1.00	0.00	2.00	1.00
Final Sat.:	0	0	1790	10	1750	0	3800	1750
Capacity Analysis Module:								
Vol/Sat:	0.00	0.00	0.10	0.10	0.21	0.00	0.07	0.08
Crit Moves:	*****	*****	*****	*****	*****	*****	*****	*****
Green Time:	0.0	0.0	0.0	0.0	61.6	61.6	0.0	22.4
Volume/Cap:	0.00	0.00	0.00	0.00	0.16	0.16	0.34	0.00
Delay/Veh:	0.00	0.00	0.00	0.00	6.2	6.2	7.2	0.00
ProjAdj/Fctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	1.00	1.00	1.00	1.00

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM Peak

Intersection #11: Ellis/101 NB Ramps
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1



Initial Vol: 265*** Lanes: 1
Signal=Split/Rights=Include
Vol Cnt Date: 9 Cycle Time (sec): 17
Loss Time (sec): 0
Critical V/C: 0
Avg Crit Del (sec/veh): 0
Avg Delay (sec/veh): 0
LOS: B

Initial Vol: 265*** Lanes: 1
Signal=Split/Rights=Include
Vol Cnt Date: 9 Cycle Time (sec): 17
Loss Time (sec): 0
Critical V/C: 0
Avg Crit Del (sec/veh): 0
Avg Delay (sec/veh): 0
LOS: C

Intersection #11: Ellis/101 NB Ramps
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1

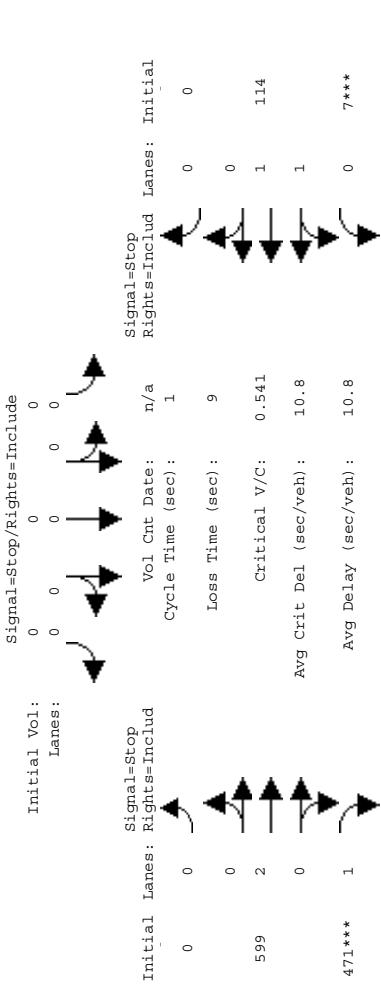
Approach:	North Bound	South Bound	East Bound	West Bound
Approach Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	10 10	0 0	10 10	0 0
Volume Module:				
Base Vol:	265	9	17	0
Growth Adj:	1.00	1.00	1.00	1.00
Initial Bee:	265	9	17	0
Added Vol:	0	0	0	0
Pastrial Fct:	265	9	17	0
User Adj:	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00
PHF Volume:	265	9	17	0
Reducit Vol:	0	0	0	0
Reduc Vol:	265	9	17	0
PCE Adj:	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00
Final Vol.:	265	9	17	0
Saturation Flow Module:				
Sat/Lane:	1800	1800	1800	1800
Adjustment:	1.00	1.00	1.00	1.00
Lanes:	1.00	0.35	0.65	0.00
Final Sat.:	1800	623	1177	0
Capacity Analysis Module:				
Vol/Sat:	0.15	0.01	0.01	0.00
Crit Moves:	*****			
Green Time:	28.8	28.8	0.0	0.0
Volume/Cap:	0.31	0.31	0.00	0.00
Delay/Veh:	7.3	6.3	0.0	0.0
ProgAdjFctr:	1.00	1.00	1.00	1.00
AddDel/Veh:	7.3	6.3	0.0	0.0
Desgnqueue:	5	0	0	0

Approach:	North Bound	South Bound	East Bound	West Bound
Approach Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	10 10	0 0	10 10	0 0
Volume Module:				
Base Vol:	265	9	17	0
Growth Adj:	1.18	1.18	1.18	1.18
Initial Bee:	314	11	20	0
Added Vol:	0	0	0	0
Approved Pr:	448	0	0	0
Initial Fct:	762	11	180	0
User Adj:	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00
PHF Volume:	762	11	180	0
Reducit Vol:	0	0	0	0
Reduc Vol:	762	11	180	0
PCE Adj:	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00
Final Vol.:	762	11	180	0
Saturation Flow Module:				
Sat/Lane:	1800	1800	1800	1800
Adjustment:	1.00	1.00	1.00	1.00
Lanes:	1.00	0.06	0.94	0.00
Final Sat.:	1800	104	1696	0
Capacity Analysis Module:				
Vol/Sat:	0.42	0.11	0.11	0.00
Crit Moves:	*****			
Green Time:	58.4	58.4	0.0	0.0
Volume/Cap:	0.73	0.18	0.00	0.00
Delay/Veh:	12.9	7.4	0.0	0.0
ProgAdjFctr:	1.00	1.00	1.00	1.00
AddDel/Veh:	12.9	7.4	0.0	0.0
Desgnqueue:	20	0	4	0

Level Of Service Computation Report
1997 HCM 4-Way Stop (Future Volume Alternative)
AM 2013 Project Alt. 1

Level of Service Computation Report
1997 HCM 4-Way Stop (Future Volume Alternative)
AM 2013 Project Alt. 4

Intersection #12: Ellis/Manila



Initial Vol: 0 Lanes: 0 Vol Cnt Date: n/a Cycle Time (sec): 10.8 Loss Time (sec): 9 Critical V/C: 0.541 Avg Crit Del (sec/veh): 10.8 Avg Delay (sec/veh): 7*** LOS: B

Initial Vol: 0 Lanes: 0 Vol Cnt Date: n/a Cycle Time (sec): 10.8 Loss Time (sec): 9 Critical V/C: 0.735 Avg Crit Del (sec/veh): 16.2 Avg Delay (sec/veh): 16.2 LOS: C

Initial Vol: 0 Lanes: 0 Vol Cnt Date: n/a Cycle Time (sec): 10.8 Loss Time (sec): 9 Critical V/C: 0.735 Avg Crit Del (sec/veh): 16.2 Avg Delay (sec/veh): 16.2 LOS: C

Initial Vol: 0 Lanes: 0 Vol Cnt Date: n/a Cycle Time (sec): 10.8 Loss Time (sec): 9 Critical V/C: 0.735 Avg Crit Del (sec/veh): 16.2 Avg Delay (sec/veh): 16.2 LOS: C

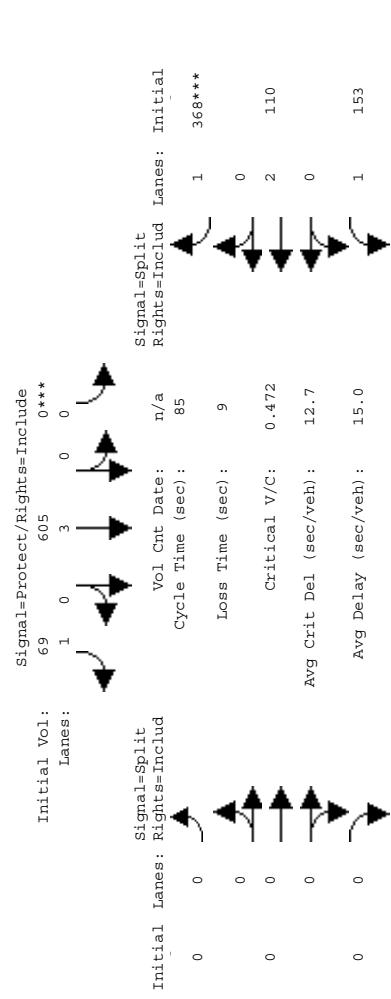
Initial Vol: 0 Lanes: 0 Vol Cnt Date: n/a Cycle Time (sec): 10.8 Loss Time (sec): 9 Critical V/C: 0.735 Avg Crit Del (sec/veh): 16.2 Avg Delay (sec/veh): 16.2 LOS: C

Approach:	North Bound	South Bound	East Bound	West Bound	Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	7	10	7	10	Min. Green:	7	10	7	10
Volume Module:					Volume Module:				
Base Vol:	19	0	5	0	Base Vol:	19	0	5	0
Growth Adj:	1.18	1.18	1.18	1.18	Growth Adj:	1.18	1.18	1.18	1.18
Initial Bee:	22	0	6	0	Initial Bee:	22	0	6	0
Added Vol:	0	0	13	0	Added Vol:	23	0	38	0
Approved Pr:	32	0	0	0	Approved Pr:	32	0	0	0
Initial Fut:	54	0	19	0	Initial Fut:	77	0	44	0
User Adj:	1.00	1.00	1.00	1.00	User Adj:	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	PHF Adj:	1.00	1.00	1.00	1.00
PHF Volume:	54	0	19	0	PHF Volume:	77	0	44	0
Reduc Vol:	0	0	0	0	Reduc Vol:	0	0	0	0
Reduced Vol:	54	0	19	0	Reduced Vol:	77	0	44	0
PCE Adj:	1.00	1.00	1.00	1.00	PCE Adj:	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	MLF Adj:	1.00	1.00	1.00	1.00
Final Vol.:	54	0	19	0	Final Vol.:	77	0	44	0
Saturation Flow Module:					Saturation Flow Module:				
Adjustment:	1.00	1.00	1.00	1.00	Adjustment:	1.00	1.00	1.00	1.00
Lanes:	0.74	0.0	0.26	0.0	Lanes:	0.64	0.0	0.36	0.0
Final Sat.:	452	0	159	0	Final Sat.:	373	0	213	0
Capacity Analysis Module:					Capacity Analysis Module:				
Crit Moves:	*****	xxxxx	xxxxx	xxxxx	Crit Moves:	*****	xxxxx	xxxxx	xxxxx
Delay/Veh:	9.3	0.0	9.3	0.0	Delay/Veh:	10.5	0.0	10.5	0.0
Adj/Del/Veh:	1.00	1.00	1.00	1.00	Adj/Del/Veh:	1.00	1.00	1.00	1.00
Los by Move:	A	*	A	*	Los by Move:	B	*	*	*
ApproachDel:	9.3	0.0	9.3	0.0	ApproachDel:	10.5	0.0	10.5	0.0
Delay Adj:	1.00	1.00	1.00	1.00	Delay Adj:	1.00	1.00	1.00	1.00
ApprAdjDel:	10.5	0.0	10.5	0.0	ApprAdjDel:	10.5	0.0	10.5	0.0
Los by Appr:	A	*	A	*	Los by Appr:	B	*	C	*

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM Peak

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)



Approach:	North Bound	South Bound	East Bound	West Bound	Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	7 10 0 0	0 10 0 0	0 10 0 0	0 10 0 0	Min. Green:	7 10 0 0	0 10 0 0	0 10 0 0	0 10 0 0
Volume Module:					Volume Module:				
Base Vol:	98 803 0 0	0 605 69 0	0 0 153 110	368	Base Vol:	98 803 0 0	0 605 69 0	0 0 153 110	368
Growth Adj:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00	Growth Adj:	1.18 1.18 1.18 1.18	1.18 1.18 1.18 1.18	1.18 1.18 1.18 1.18	1.18
Initial Bee:	98 803 0 0	0 605 69 0	0 0 153 110	368	Initial Bee:	116 951 0 0	0 716 82 0	0 0 181 130	436
Added Vol:	0 0 0 0	0 0 0 0	0 0 0 0	0	Added Vol:	0 118 0 0	0 6 5	0 0 0 0	0 0 0 0
Pasterial Fct:	98 803 0 0	0 605 69 0	0 0 153 110	368	Approved Pr:	0 356 0 0	0 250 35	0 0 0 0	0 0 0 0
User Adj:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00	Initial Fct:	116 1425 0 0	0 972 122	0 0 0 0	0 0 0 0
PHF Adj:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00	User Adj:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00
PHF Volume:	98 803 0 0	0 605 69 0	0 0 153 110	368	PHF Adj:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00
Reducit Vol:	0 0 0 0	0 0 0 0	0 0 0 0	0	PHF Volume:	116 1425 0 0	0 972 122	0 0 0 0	0 0 0 0
Reduced Vol:	98 803 0 0	0 605 69 0	0 0 153 110	368	Reducit Vol:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
PCE Adj:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00	PCE Adj:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00
MLF Adj:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00	MLF Adj:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00
Final Vol.:	98 803 0 0	0 605 69 0	0 0 153 110	368	Final Vol.:	116 1425 0 0	0 972 122	0 0 0 0	0 0 0 0
Saturation Flow Module:					Saturation Flow Module:				
Sat/Lane:	1800 1800 1800 1800	1800 1800 1800 1800	1800 1800 1800 1800	1800 1800 1800 1800	Sat/Lane:	1800 1800 1800 1800	1800 1800 1800 1800	1800 1800 1800 1800	1800 1800 1800 1800
Adjustment:	0.88 1.06 0.97 0.97	1.06 0.97 1.06 0.97	1.06 0.97 1.06 0.97	1.06 0.97 1.06 0.97	Adjustment:	0.88 1.06 0.97 0.97	1.06 0.97 1.06 0.97	1.06 0.97 1.06 0.97	1.06 0.97 1.06 0.97
Lanes:	2.00 2.00 0.00 0.00	0.00 3.00 1.00 0.00	0.00 2.00 1.00 0.00	0.00 2.00 1.00 0.00	Lanes:	2.00 2.00 0.00 0.00	0.00 3.00 1.00 0.00	0.00 2.00 1.00 0.00	0.00 2.00 1.00 0.00
Final Sat.:	3150 3800 0 0	0 5700 1750 0	0 0 1750 3800	0	Final Sat.:	3150 3800 0 0	0 5700 1750 0	0 0 1750 3800	0 0 1750 3800
Capacity Analysis Module:					Capacity Analysis Module:				
Vol/Sat:	0.03 0.21 0.00 0.00	0.00 0.11 0.04 0.00	0.00 0.09 0.03 0.21	****	Vol/Sat:	0.04 0.37 0.00 0.00	0.00 0.17 0.07 0.00	0.00 0.00 0.00 0.00	0.11 0.06 0.31 ****
Crit Moves:	*****				Crit Moves:	*****			
Green Time:	15.7 38.1 0.0 0.0	22.4 0.0 0.0 0.0	37.9 37.9 37.9	37.9	Green Time:	7.0 41.8 0.0 0.0	34.8 0.0 0.0 0.0	34.2 34.2 34.2 34.2	34.2 34.2 34.2 34.2
Volume/Cap:	0.17 0.47 0.00 0.00	0.00 0.40 0.15 0.00	0.00 0.20 0.06 0.47	0.47	Volume/Cap:	0.45 0.76 0.00 0.00	0.00 0.42 0.17 0.00	0.00 0.27 0.16 0.00	0.76 0.76 0.76 0.76
Delay/Veh:	22.2 12.6 0.0 0.0	0.19.7 18.2 0.0 0.0	0.0 10.9 10.2 12.9	12.9	Delay/Veh:	29.1 14.7 0.0 0.0	0.0 13.7 12.1 0.0	0.0 12.0 12.3 0.0	20.1 20.1 20.1 20.1
Delay Adj:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00	Delay Adj:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
ProgAdjFctr:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00	ProgAdjFctr:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
AddDel/Veh:	22.2 12.6 0.0 0.0	0.19.7 18.2 0.0 0.0	0.0 10.9 10.2 12.9	12.9	AddDel/Veh:	29.1 14.7 0.0 0.0	0.0 13.7 12.1 0.0	0.0 13.0 12.3 0.0	20.1 20.1 20.1 20.1
DesInqueue:	4 22 0 0	0 22 2 0	0 0 4 3	10	DesInqueue:	5 38 0 0	0 28 3 0	0 0 6 7	16 16 16 16

Level Of Service Computation Report
 1985 HCM Operations (Future Volume Alternative)
 AM 2013 Project Alt. 4

**Level Of Service Computation Report
985 HCM Operations (Future Volume Alternative)
AM Peak**

Original-Protect/Rights=Include

Signal	Lanes	Vol	Cnt	Date	Cycle Time (sec)	Loss Time (sec)	Critical V/C	Avg Crit Del (sec/veh)	Avg Delay (sec/veh)	Loss
Protect/Rights=Include	3	137	1023	0***	n/a	85	9	0.811	17.1	15.7
Split Lanes: Rights=Includ	2	0	0							C4

Lanes:	2	0	2	0	0
Initial Vol:	116		1582***	0	0
Signal=Protect/Rights=Include					
Approach:	North Bound	South Bound	East Bound		
Covement:	L - T - R	L - T - R	L - T - R		
Min. Green:	7	10	0	10	0
Column Module:	-	-	-	-	-
Phase Vol:	98	803	0	605	69
Growth Adj:	1.18	1.18	1.18	1.18	1.18
Initial Bee:	116	951	0	716	82
Added Vol:	0	275	0	57	20
Approved Pr:	0	356	0	250	35
Initial Fut:	116	1582	0	1023	137
User Adj:	1.00	1.00	1.00	1.00	1.00
HFF Adj:	1.00	1.00	1.00	1.00	1.00
HFF Volume:	116	1582	0	1023	137
Reduced Vol:	0	0	0	0	0
Reduced Vol:	116	1582	0	1023	137
CE Adj:	1.00	1.00	1.00	1.00	1.00
LFL Adj:	1.00	1.00	1.00	1.00	1.00
Final Vol.:	116	1582	0	1023	137
Saturation Flow Module:					
at/Lane:	1800	1800	1800	1800	1800
Adjustment:	2.00	2.00	0.0	3.00	1.00
Final Sat.:	3150	3800	0	5700	1550
Capacity Analysis Module:					
oil/Sat:	0.04	0.42	0.00	0.00	0.18
crit Moves:	*****	*****	*****	*****	*****
Green Time:	7.0	43.6	0.0	0.0	36.6
Green Time/Cap:	0.45	0.81	0.0	0.0	0.42
relay/Veh:	29.1	15.0	0.0	0.0	12.8
rogAdj/Bdj:	1.00	1.00	1.00	1.00	1.00
rogAdj/Pctr:	1.00	1.00	1.00	1.00	1.00
ridDel/Veh:	29.1	15.0	0.0	0.0	12.8
sim/Veh:	5	41	0	0	29
					4

Level Of
1985 HCM Opera

**Level Of Service Computation Report
985 HCM Operations (Future Volume Alternative)
AM Peak**

Original-Protect/Rights=Include

Lanes:	2	0	2	0	0
Initial Vol:	116		1582***	0	0
Signal=Protect/Rights=Include					
Approach:	North Bound	South Bound	East Bound		
Covement:	L - T - R	L - T - R	L - T - R		
Min. Green:	7	10	0	10	0
Column Module:	-	-	-	-	-
Phase Vol:	98	803	0	605	69
Growth Adj:	1.18	1.18	1.18	1.18	1.18
Initial Bee:	116	951	0	716	82
Added Vol:	0	275	0	57	20
Approved Pr:	0	356	0	250	35
Initial Fut:	116	1582	0	1023	137
User Adj:	1.00	1.00	1.00	1.00	1.00
HFF Adj:	1.00	1.00	1.00	1.00	1.00
HFF Volume:	116	1582	0	1023	137
Reduced Vol:	0	0	0	0	0
Reduced Vol:	116	1582	0	1023	137
CE Adj:	1.00	1.00	1.00	1.00	1.00
LFL Adj:	1.00	1.00	1.00	1.00	1.00
Final Vol.:	116	1582	0	1023	137
Saturation Flow Module:	-	-	-	-	-
at/Lane:	1800	1800	1800	1800	1800
Adjustment:	2.00	2.00	0.0	3.00	1.00
Final Sat.:	3150	3800	0	5700	1550
Capacity Analysis Module:	-	-	-	-	-
oil/Sat:	0.04	0.42	0.00	0.00	0.18
crit Moves:	*****	*****	*****	*****	*****
Green Time:	7.0	43.6	0.0	0.0	36.6
Green Time/Cap:	0.45	0.81	0.0	0.0	0.42
relay/Veh:	29.1	15.0	0.0	0.0	12.8
rogAdj/Bdj:	1.00	1.00	1.00	1.00	1.00
rogAdj/Pctr:	1.00	1.00	1.00	1.00	1.00
ridDel/Veh:	29.1	15.0	0.0	0.0	12.8
sim/Veh:	5	41	0	0	29
sim/Veh:	5	41	0	0	4

Level Of
1985 HCM Opera

**Level Of Service Computation Report
985 HCM Operations (Future Volume Alternative)
AM Peak**

Original-Protect/Rights=Include

Initial Vol/Lanes: 137/137

Initial Vol/Lanes: 1/1

Signal=Protect/Rights=Include

Vol/Cnt: 1023/3

Cycle Time (sec): n/a/85

Loss Time (sec): 0/9

Critical V/C: 0.811/0.811

Avg Crit Del (sec/veh): 17.1/17.1

Avg Delay (sec/veh): 15.7/15.7

Dots: .../C4

Initial Vol/Lanes: 0/0

Initial Vol/Lanes: 0/0

Signal=Split

Vol/Cnt: 0/0

Cycle Time (sec): 0/0

Loss Time (sec): 0/0

Critical V/C: 0/0

Avg Crit Del (sec/veh): 0/0

Avg Delay (sec/veh): 0/0

Dots: .../C4

Lanes:	2	0	2	0	0
Initial Vol:	116		1582***	0	0
Signal=Protect/Rights=Include					
Approach:	North Bound	South Bound	East Bound		
Covement:	L - T - R	L - T - R	L - T - R		
Min. Green:	7	10	0	10	0
Column Module:	-	-	-	-	-
Phase Vol:	98	803	0	605	69
Growth Adj:	1.18	1.18	1.18	1.18	1.18
Initial Bee:	116	951	0	716	82
Added Vol:	0	275	0	57	20
Approved Pr:	0	356	0	250	35
Initial Fut:	116	1582	0	1023	137
User Adj:	1.00	1.00	1.00	1.00	1.00
HFF Adj:	1.00	1.00	1.00	1.00	1.00
HFF Volume:	116	1582	0	1023	137
Reduced Vol:	0	0	0	0	0
Reduced Vol:	116	1582	0	1023	137
CE Adj:	1.00	1.00	1.00	1.00	1.00
LFL Adj:	1.00	1.00	1.00	1.00	1.00
Final Vol.:	116	1582	0	1023	137
Saturation Flow Module:					
at/Lane:	1800	1800	1800	1800	1800
Adjustment:	2.00	2.00	0.0	3.00	1.00
Final Sat.:	3150	3800	0	5700	1550
Capacity Analysis Module:					
oil/Sat:	0.04	0.42	0.00	0.00	0.18
crit Moves:	*****	*****	*****	*****	*****
Green Time:	7.0	43.6	0.0	0.0	36.6
Green Time/Cap:	0.45	0.81	0.0	0.0	0.42
relay/Veh:	29.1	15.0	0.0	0.0	12.8
rogAdj/Bdj:	1.00	1.00	1.00	1.00	1.00
rogAdj/Pctr:	1.00	1.00	1.00	1.00	1.00
ridDel/Veh:	29.1	15.0	0.0	0.0	12.8
sim/Veh:	5	41	0	0	29
					4

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 4

Level Of Service Computation Report
HCM Operations (Future Volume Alternative)
985 AM Peak

Signal=Split/Rights=Include vs Signal=Protect

Initial Vol:	Lanes:	Vol Cnt	Date:	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):
51	1 0	0	n/a	60	9	0.464	10.4	8.4
574***	1	0	1	0	0	1	0	0
319	1	0	1	0	0	1	0	0
0	0	0	0	0	0	0	0	0

Rights=Ignore vs Rights=Protect

Initial Lanes:	Rights=Includ	Rights=Ignore	Lanes:	Initial
1	0	1	0	22***
0	1	0	1	102***
1	0	1	0	0
0	0	0	0	0

**Level Of Service Computation Report
985 HCM Operations (Future Volume Alternative)
AM Peak**

The diagram illustrates two traffic signal control scenarios:

- Signal=Protect/Rights=Include** (Top):
 - Initial Vol: 0 Lanes: 0
 - Vol Cnt: 725 Rights: 56***
 - Cycle Time (sec): 110
 - Loss Time (sec): 9
 - Critical V/C: 0.381
 - Avg Crit Del (sec/veh): 15.8
 - Avg Delay (sec/veh): 14.3
 - Lanes: Initial 0, Signal=Split 0, Signal=Protect 1
- Signal=Split Rights=Overlap** (Bottom):
 - Initial Vol: 0 Lanes: 0
 - Vol Cnt: 643*** Rights: 2
 - Cycle Time (sec): 110
 - Loss Time (sec): 9
 - Critical V/C: 0.381
 - Avg Crit Del (sec/veh): 15.8
 - Avg Delay (sec/veh): 14.3
 - Lanes: Initial 0, Signal=Split 0, Signal=Protect 1

Initial Vol:	0	1787***	1090	
Signal=Protect/Rights=Ignore				
Approach:	North Bound	South Bound	East Bound	
L - T - R	L - T - R	L - T - R	L - T - R	
Min. Green:	0 10 10	7 10 0	7 10 0	0 0 0
Volume Module:	- - - - -	- - - - -	- - - - -	- - - - -
Base Vol:	0 1787	1090 56	725 0	643 1
Initial Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
Initial Vol:	0 1787	1090 56	725 0	643 1
Added Vol:	0 0	0 0	0 0	0 0
PasserByVol:	0 1787	1090 56	725 0	643 1
Initial Fut:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
SE59 Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHIFP Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHIFP Volume:	0 1787	0 56	725 0	643 1
Reduced Vol:	0 0	0 0	0 0	0 0
Reduced Vol:	0 1787	0 56	725 0	643 1
PE59 Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
MLF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
Final Vol.:	0 1787	0 56	725 0	643 1
Saturation Flow Module:	- - - - -	- - - - -	- - - - -	- - - - -
Vol/Sat:	1800 1800	1800 1800	1800 1800	1800 1800
Initial Adjustment:	0.97 1.06	0.97 1.06	0.97 1.06	0.97 1.06
Vol/Cap:	0.00 5.00	1.00 3.00	0.00 2.99	0.01 1.00
Delay/Veh:	0 9500	1750 1750	5700 0	4942 8
Capacity Analysis Module:	- - - - -	- - - - -	- - - - -	- - - - -
Vol/Sat:	0.00 0.19	0.00 0.03	0.13 0.0	0.13 0.13
Initial Moves:	*****	*****	*****	*****
Vol/Time:	0.54 5.2	0.0 9.2	63.5 0	37.5 37.5
Vol/Cap:	0.00 0.38	0.00 0.38	0.22 0.0	0.38 0.38
Delay/Veh:	0.00 13.3	0.0 37.1	8.6 0	20.9 20.9
ProgAdjRctr:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
AdjDel/Veh:	0.0 13.3	0.0 37.0	1.00 1.00	1.00 1.00
DesigndQueue:	0 58	0 3	19 0	27 0

Level Of Service Computation Report
985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1

Level Of Service Computation Report
985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 4

Lanes:	0	0	5	0	1
Initial Vol:	0	3771	***	39	Signal=Protect/Rights-Ignore
<hr/>					
approach:	North Bound	South Bound	East Bound	West Bound	
L - T - R	L - T - R	L - T - R	L - T - R		
Min. Green:	0 10	10	0	7 10	10
<hr/>					
Volume Module:	-	-	-	-	-
Base Vol:	0 1787	0	56 725	0	643 1
growth Adj:	1.18 1.18	1.18	1.18 1.18	1.18 1.18	1.18 1.18
initial Bas:	0 2116	0	66 858	0	761 1
added Vol:	0 1648	0	82 336	0	2188 0
Approved Pr:	0 1647	39	148 1195	0	2949 1
initial Filt:	0 3771	39	148 1195	0	125 0
User Adj:	1.00 1.00	0.00	1.00 1.00	1.00 1.00	1.00 1.00
HF Adj:	1.00 1.00	0.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Volume:	0 3771	0	148 1195	0	2949 1
reduct Vol:	0 0	0	0 0	0	0 0
reduced Vol:	0 3771	0	148 1195	0	2949 1
PE Adj:	1.00 1.00	0.00	1.00 1.00	1.00 1.00	1.00 1.00
MIF Adj:	1.00 1.00	0.00	1.00 1.00	1.00 1.00	1.00 1.00
Final Vol:	0 3771	0	148 1195	0	2949 1
<hr/>					
Saturation Flow Module:	-	-	-	-	-
sat/Lane:	1800 1800	1800	1800 1800	1800 1800	1800 1800
adj/adjustment:	0.97 1.06	0.97	1.06 0.97	0.92 1.00	0.97 1.06
lanes:	0.00 5.00	1.00	1.00 3.00	0.00 2.99	0.00 0.00
final Sat:	0 9500	1750	1750 5700	0 4948	2 1750 0
<hr/>					
Capacity Analysis Module:	-	-	-	-	-
Vol/Sat:	0.00 0.40	0.00	0.08 0.21	0.00	0.60 0.60
Trt Moves:	****	****	****	****	****
Volume/Cap:	0.00 1.17	0.00	1.17 0.51	0.00	1.17 1.17
Delay/Veh:	0.0 117	0.0	181.4 18.6	0.0	112.6 113
ProcrAdj/cfr:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00
adj/vel/Veh:	0.0 117	0.0	181.4 18.6	0.0	112.6 113

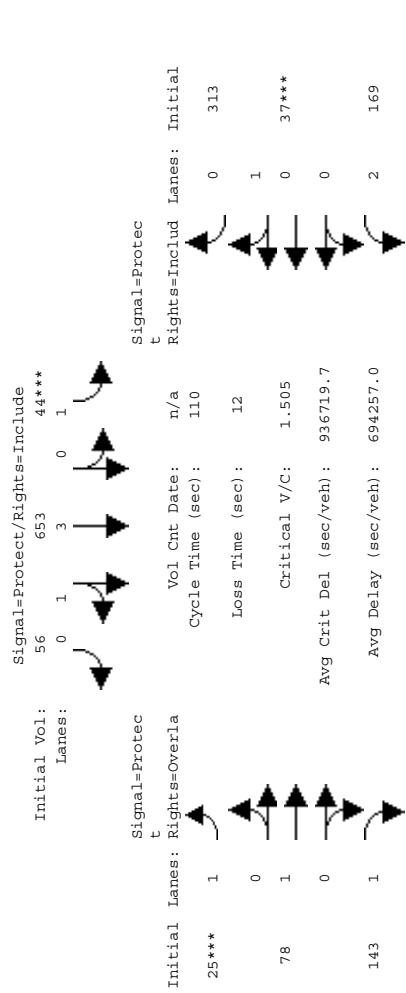
Level Of Service Computation Report
985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 4

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1

Level Of Service Computation Report
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Intersection #18: Mathilda/Moffett Park

Intersection #18: Mathilda/Moffett Park

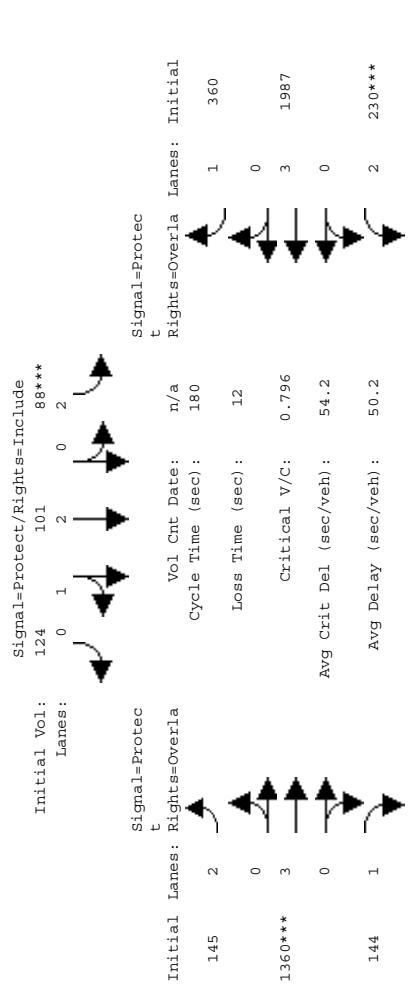


Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	7 10 10	7 10 10	7 10 10	7 10 10
Volume Module:	593 918 1001	4 117 21	66 123 31	18 18 18
Base Vol:	1 18 1.18	1.18 1.18 1.18	1.18 1.18 1.18	1.18 1.18 1.18
Growth Adj:	1.18 1.18	1.18 1.18 1.18	1.18 1.18 1.18	1.18 1.18 1.18
Initial Bee:	702 1087 1186	56 25 78	97 146 37	21 21
Added Vol:	0 0 0	0 0 0	0 0 0	0 0 0
Approved Pr:	497 3748 39	514 0	45 23 0	292 313
Initial Fut:	1237 4835 1363	44 653 56	25 78 143	169 37
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Volume:	1232 4835 1363	44 653 56	25 78 143	169 37
Reduced Vol:	0 0 0	0 0 0	0 0 0	0 0 0
Reduced Vol:	1232 4835 1363	44 653 56	25 78 143	169 37
PCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
MLF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Vol.:	1232 4835 1363	44 653 56	25 78 143	169 37
Saturation Flow Module:	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800
Sat/Lane:	0.38 1.11 1.11	0.03 0.09 0.09	0.01 0.04 0.08	0.05 0.19 0.19
Crit Moves:	*****	*****	*****	*****
Green Time:	63.0 71.5 71.5	7.0 15.5 15.5	74.5 8.0 12.5	12.5 73.6 73.6
Volume/Cap:	0.67 1.70 1.70	0.40 0.67 0.67	0.22 0.39 0.12	0.73 1.70 1.70
Lanes/Veh:	13.1 xxxx xxxx	38.8 35.3 35.3	37.4 35.6 4.7	45.6 794 793.5
Delay Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
ProgAdjFcrr:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
AddJl/Veh:	13.1 xxxx xxxx	38.6 35.3 35.3	37.4 35.6 4.7	45.6 794 793.5
DesignQueue:	35 146 40	3 35 3	3 1 4	3 10 2
Vol/Sat:	0.39 1.18 1.18	0.03 0.10 0.10	0.01 0.04 0.09	0.05 0.19 0.19
Crit Moves:	*****	*****	*****	*****
Green Time:	62.5 72.1 72.1	7.0 16.6 16.6	73.6 73.6 73.6	73.6 73.6 73.6
Volume/Cap:	0.69 1.80 1.80	0.40 0.69 0.69	0.22 0.41 0.13	0.76 1.80 1.80
Delay Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
ProgAdjFcrr:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
AddJl/Veh:	13.1 xxxx xxxx	38.6 34.9 34.9	37.4 36.0 5.0	47.5 980 979.5
DesignQueue:	36 159 41	3 39 3	3 1 4	3 10 2

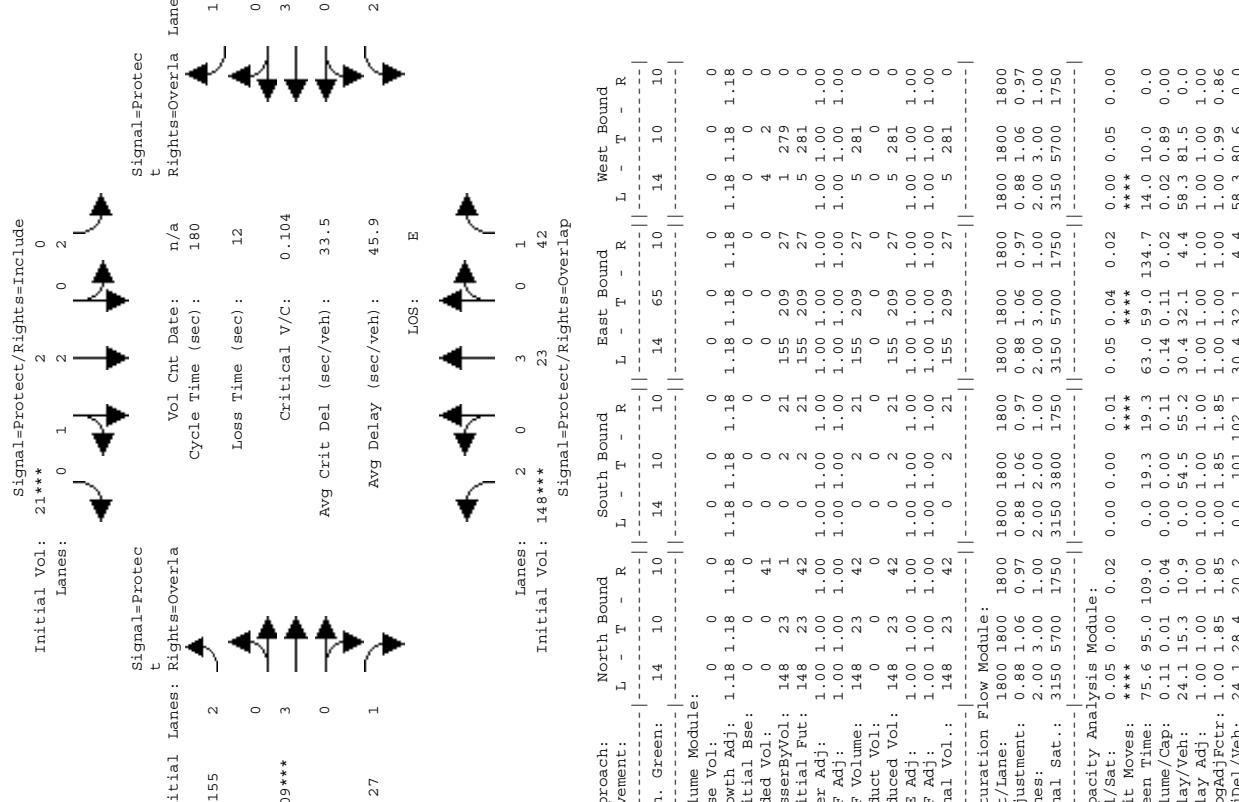
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM Peak

Intersection #19: Central/Mary
Intersection #19: Central/Mary
Level Of Service Computation Report
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Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)



Approach:	North Bound	South Bound	East Bound	West Bound	Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	14 10 10	14 10 10	14 10 10	14 10 10	Min. Green:	14 10 10	14 10 10	14 10 10	14 10 10
Volume Module:									
Base Vol:	745	544	834	88	101	124	145	1360	144
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bee:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Added Vol:	0	0	0	0	0	0	0	0	0
PassesByVol:	0	0	0	0	0	0	0	0	0
Initial Fut:	745	544	834	88	101	124	145	1360	144
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	745	544	834	88	101	124	145	1360	144
Reduced Vol:	0	0	0	0	0	0	0	0	0
Reduced Vol:	745	544	834	88	101	124	145	1360	144
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	745	544	834	88	101	124	145	1360	144
Saturation Flow Module:									
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lanes:	2.00	3.00	1.00	2.00	2.00	3.00	1.00	2.00	3.00
Final Sat.:	3150	5700	1750	3150	3800	1750	3150	5700	1750
Capacity Analysis Module:									
Vol/Sat:	0.24	0.10	0.48	0.03	0.07	0.05	0.24	0.08	0.07
Crit. Moves:	****	****	****	****	****	****	****	****	****
Green Time:	68.5	75.0	89.0	14.0	20.5	20.5	14.0	65.0	79.0
Volume/Cap:	0.62	0.23	0.96	0.36	0.23	0.62	0.59	0.66	0.11
Delay/Veh:	24.1	25.7	49.8	60.2	55.2	60.1	63.7	57.2	27.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFcrr:	1.00	1.85	1.42	1.00	1.85	1.81	1.00	1.00	1.00
AddJl/Veh:	24.1	47.6	70.6	60.2	102.1	108.9	63.7	57.2	23.6
DesignQueue:	49	33	48	8	9	11	14	93	22



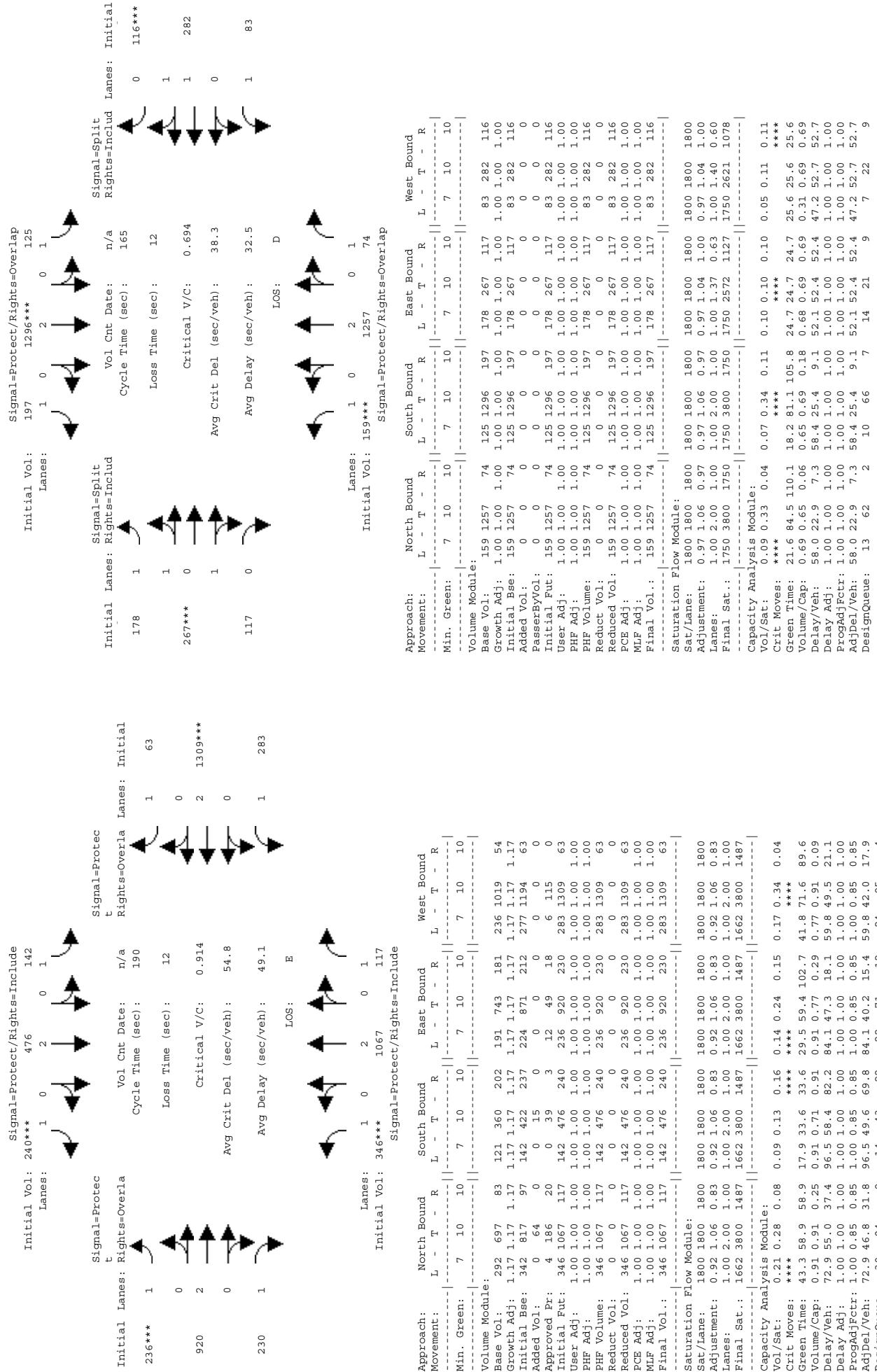
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 4

Intersection #19: Central/Mary

Signal=Protect/Rights=Include									
Initial Vol:	21***								
Lanes:	0	1	2	0	0				
Initial Lanes: Rights-Overla									
Vol Cnt Date:	n/a								
Cycle Time (sec):	180								
Loss Time (sec):	12								
Initial Vol:	148***								
Lanes:	2	0	3	0	1				
Initial Vol:	148***								
Lanes:	10	14	10	10	14				
Initial Vol:	14	10	10	14	10				
Approach:	North Bound	South Bound	East Bound	West Bound					
Movement:	L - T - R	L - T - R	L - T - R	L - T - R					
Min. Green:	14	10	14	10	14	14	10	10	
Signal=Protect/Rights=Overlap									
Volume Module:									
Base Vol:	0	0	0	0	0	0	0	0	0
Growth Adj:	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18
Initial Bee:	0	0	0	0	0	0	0	0	0
Added Vol:	0	147	0	0	0	0	0	0	0
PassengerVol:	148	23	1	0	2	21	155	209	27
Initial Fct:	148	23	148	0	2	21	155	214	27
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	148	23	148	0	2	21	155	214	27
Reduced Vol:	0	0	0	0	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	148	23	148	0	2	21	155	214	27
Saturation Flow Module:									
Sat Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.88	1.06	0.97	0.88	1.06	0.97	0.88
Lanes:	2.00	3.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00
Final Sat.:	3150	5700	1750	3150	3800	1750	3150	5700	1750
Capacity Analysis Module:									
Vol/Sat:	0.05	0.00	0.00	0.00	0.01	0.05	0.04	0.02	0.01
Crit. Moves:	*****		*****		*****		*****		*****
Green Time:	69.4	87.1	103.0	0.0	17.7	17.7	70.9	65.0	134.4
Volume/Cap:	0.12	0.01	0.15	0.00	0.01	0.12	0.10	0.02	0.12
Delay/Veh:	27.1	18.3	13.7	0.0	55.6	56.3	26.4	29.0	57.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.85	1.85	1.00	1.85	1.85	1.00	1.00	1.00
Addl/Veh:	27.1	33.9	25.3	0.0	103	104.1	26.4	23.0	4.5
DesgnQueue:	9	1	6	0	0	2	9	14	1

Level Of Service Computation Report
HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 4

Level Of Service Computation Report
85 HCM Operations (Future Volume Alternative)
PM Peak



Level Of Service Computation Report
HCM Operations (Future Volume Alternative)
PM Peak

Level Of Service Computation Report
 HCM Operations (Future Volume Alternative)
 PM 2013 Project Alt. 1

Intersection #3: Moffatt/Middlefield

	Initial	Final (10 sec)
Signal=Protect/Rights=Include	Initial Vol: 160 Lanes: 0 1 181 0 1 72*** 	Vol Cnt Date: n/a Cycle Time (sec) : 100
Signal=Protect Rights=Includ	Initial Vol: 160 Lanes: 0 1 181 0 1 72*** 	Vol Cnt Date: n/a Cycle Time (sec) : 100

Capacity Analysis Module:		Vol/Sat		Analysis Module:	
Crit Moves:	****	0.06	0.20	0.04	0.09
Green Time:	14.2	27.5	27.5	7.0	20.3
Volume/Cap:	0.43	0.72	0.72	0.59	0.45
Delay/Veh:	30.6	26.7	26.7	39.3	26.9
Adj Del/Veh:	1.00	1.00	1.00	1.00	1.00
Prog/Adj/Ctr:	1.00	1.00	1.00	1.00	1.00
Adj Del/Veh:	30.6	26.7	26.7	39.3	26.9

Level Of Service Computation Report
HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

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Plot Type	Parameter	Value	Plot Type	Parameter	Value
Signal=Protect/Rights=Include	Initial Vol:	197	Signal=Protect Rights=Includ	Initial Lanes:	0
	Lanes:	1		Vol Cnt	253
Signal=Protect/Rights=Include	Initial Vol:	301***	Signal=Protect Rights=Includ	Initial Lanes:	1
	Lanes:	0		Cycle Time (sec):	100
Signal=Protect/Rights=Include	Initial Vol:	913	Loss Time (sec):	12	n/a
	Lanes:	1		Critical V/C:	
Signal=Protect/Rights=Include	Initial Vol:	151	Avg Crit Del (sec/veh):	40.6	100
	Lanes:	0		Avg Delay (sec/veh):	
				0	148
				1	1018***
				0	0
				1	243
				D	LOS

Lanes:	1	0	1	1	0		
Initial Vol.:	216		731*	**	330		
Signal=Protect/Rights=Include							
Approach:	North Bound	South Bound	East Bound	West Bound			
Movement:	L - T - R	L - T - R	L - T - R	L - T - R			
Min. Green:	7 10	10	7 10	10	7 10	10	
Volume Module:							
Growth Adj.:	1.18 1.18 1.18 1.18 1.18 1.18 1.18	1.18 1.18 1.18 1.18 1.18 1.18 1.18	1.18 1.18 1.18 1.18 1.18 1.18 1.18	1.18 1.18 1.18 1.18 1.18 1.18 1.18	1.18 1.18 1.18 1.18 1.18 1.18 1.18	1.18 1.18 1.18 1.18 1.18 1.18 1.18	1.18 1.18 1.18 1.18 1.18 1.18 1.18
Initial Bce:	128 547	326	85 214	189	287 880	103	218 958
Added Dvl:	0	0 4	2	0	8	0	25 55
Approved Pr:	88 184		0 39	8	14 25	48	0 5
Initial Fut:	216 731	330	87 253	197	301 913	151	243 1018
User Adj.:	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj.:	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:	216 731	330	87 253	197	301 913	151	243 1018
Reducut Vol.:	0	0 0	0	0	0	0	0 0
Reduced Vol.:	216 731	330	87 253	197	301 913	151	243 1018
PCF Adj.:	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj.:	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.:	216 731	330	87 253	197	301 913	151	243 1018
Saturation Flow Module:							
Sat/Lane:	1800 1800	1800	1800 1800	1800	1800 1800	1800	1800 1800
Adjustment:	9.7 1.04	1.00	9.7 1.05	1.00	9.7 1.03	1.00	9.7 1.03
Lanes:	1.00 1.36	0.64	1.00 1.10	0.90	1.00 1.71	0.29	1.00 1.74
Final Sat.:	1750 2548	1150	1750 2079	1619	1750 3175	525	1750 3230
Final Vol.:							

	Capacity	Analysis	Module:						
Vol/Sat:	0..12	0..29	0..05	0..12	0..12	0..17	0..29	0..29	0..32
Crit Moves:	***	***	***	***	***	***	***	***	***
Green Time:	18.6	30.0	30.0	7.0	18.4	18.4	18.0	34.4	16.6
Volume/Cap:	0.66	0.96	0.96	0.71	0.66	0.66	0.96	0.84	0.84
Delay/Veh:	32.1	38.9	38.9	46.0	30.5	30.5	59.3	26.5	43.6
Delay/Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdj/Fctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj/Del/Veh:	32.1	38.9	38.9	46.0	30.5	30.5	59.3	26.5	43.6
Adj/Del/Veh:	32.1	38.9	38.9	46.0	30.5	30.5	59.3	26.5	43.6

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 4

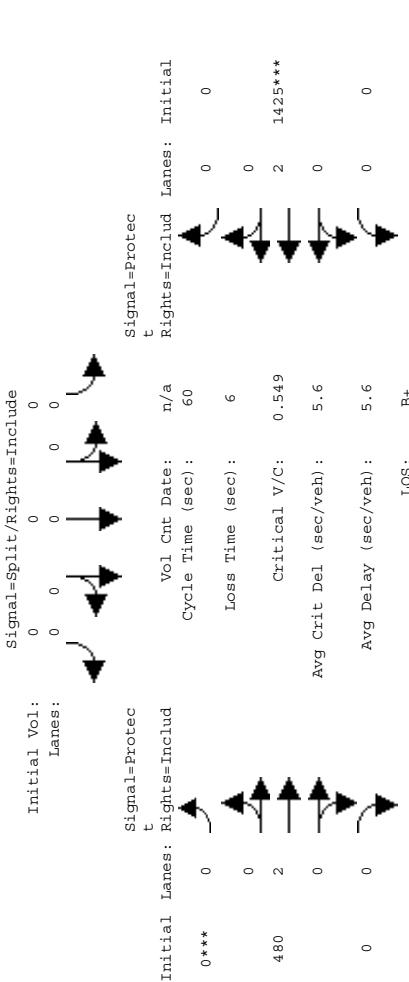
Intersection #3: Moffett/Middlefield
Intersection #4: Moffett/85 NB Ramp
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)

Approach:		North Bound		South Bound		East Bound		West Bound	
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	7	10	10	7	10	10	7	10	10
Volume Module:									
Base Vol:	108	462	275	72	181	160	242	743	87
Growth Adj:	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18
Initial Bee:	128	547	326	85	244	189	287	880	103
Added Vol:	34	10	26	13	2	0	51	6	109
Approved Pr:	88	184	0	39	8	14	25	48	0
Initial Fut:	250	741	352	98	255	197	301	956	157
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	250	741	352	98	255	197	301	956	157
Reduced Vol:	0	0	0	0	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	250	741	352	98	255	197	301	956	157
Saturation Flow Module:									
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.04	0.97	1.05	1.00	0.97	1.03	1.00	0.97
Lanes:	1.00	1.34	0.66	1.00	1.10	0.90	1.00	1.71	0.28
Final Sat.:	1750	2508	1191	1750	2086	1612	1750	3178	522
Capacity Analysis Module:									
Vol/Sat:	0.14	0.30	0.06	0.12	0.12	0.17	0.30	0.19	0.37
Crit. Moves:	*****	*****	*****	*****	*****	*****	*****	*****	*****
Green Time:	19.2	28.6	28.6	7.0	16.4	16.4	16.7	32.3	20.1
Volume/Cap:	0.74	1.03	1.03	0.80	0.74	0.74	1.03	0.93	1.03
Delay/Veh:	57.2	57.2	57.2	54.8	33.7	33.7	82.1	34.3	52.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFcrr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AddJl/Veh:	14.8	57.2	54.8	33.7	33.7	33.7	82.1	34.3	52.3
DesignQueue:	12	32	15	5	12	9	15	39	7

Approach:		North Bound		South Bound		East Bound		West Bound	
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	7	10	10	7	10	10	7	10	10
Volume Module:									
Base Vol:	108	462	275	72	181	160	242	743	87
Growth Adj:	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18
Initial Bee:	128	547	326	85	244	189	287	880	103
Added Vol:	34	10	26	13	2	0	51	6	109
Approved Pr:	88	184	0	39	8	14	25	48	0
Initial Fut:	250	741	352	98	255	197	301	956	157
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	250	741	352	98	255	197	301	956	157
Reduced Vol:	0	0	0	0	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	250	741	352	98	255	197	301	956	157
Saturation Flow Module:									
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	1.06	0.97	1.06	0.97	1.06	0.97
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	0.00
Final Sat.:	1750	0	1750	0	0	0	0	3800	0
Capacity Analysis Module:									
Vol/Sat:	0.10	0.00	0.07	0.00	0.00	0.00	0.00	0.10	0.00
Crit. Moves:	*****	*****	*****	*****	*****	*****	*****	*****	*****
Green Time:	14.8	0.0	14.8	0.0	0.0	0.0	0.0	39.2	0.0
Volume/Cap:	0.41	0.00	0.26	0.00	0.00	0.00	0.00	0.15	0.00
Delay/Veh:	14.8	0.0	13.9	0.0	0.0	0.0	0.0	3.8	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFcrr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AddJl/Veh:	14.8	0.0	13.9	0.0	0.0	0.0	0.0	3.8	0.0
DesignQueue:	12	32	15	5	12	9	15	39	7

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

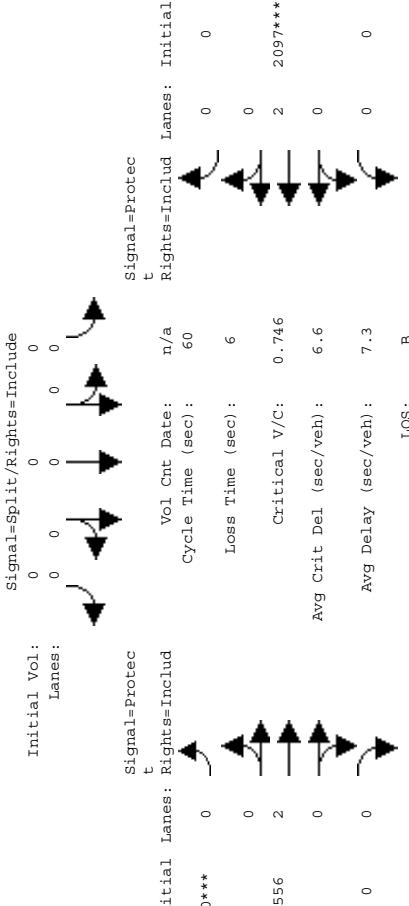
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 4



	Lanes:	1	0	0	0	1	
Initial Vol:	200***	0	0	0	0	151	Signal=Split/Rights=Inclde
approach:	North Bound	South Bound	East Bound	West Bound			
movement:	L - T - R	L - T - R	L - T - R	L - T - R			
Min. Green:	10	0	10	0	0	10	0
Volume Module:							
Base Vol:	178	0	114	0	0	376	0
Growth Adj:	1.17	1.17	1.17	1.17	1.17	1.17	1.17
Additional Base:	209	0	134	0	0	441	0
Additional Vol:	0	0	17	0	0	14	0
Approved Pr:	0	0	0	0	0	25	0
Initial Fur:	209	0	151	0	0	480	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HFE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HFE Volume:	209	0	151	0	0	480	0
Reduced Vol:	0	0	0	0	0	0	0
Reduced Vol:	209	0	151	0	0	480	0
CE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HFL Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol:	209	0	151	0	0	480	0
Saturation Flow Module:							
sat/Lane:	1800	1800	1800	1800	1800	1800	1800
adj/adjustment:	0.97	1.06	0.97	1.06	0.97	1.06	0.97
Lanes:	1.00	0.00	1.00	0.00	0.00	2.00	0.00
Final Sat.:	1750	0	1750	0	0	3800	0

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 4

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 4



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Lanes: 1 0 0 0 1
Initial Vol.: 209**** 0 0 0 256
Signal=Split/Rights-Inclusive

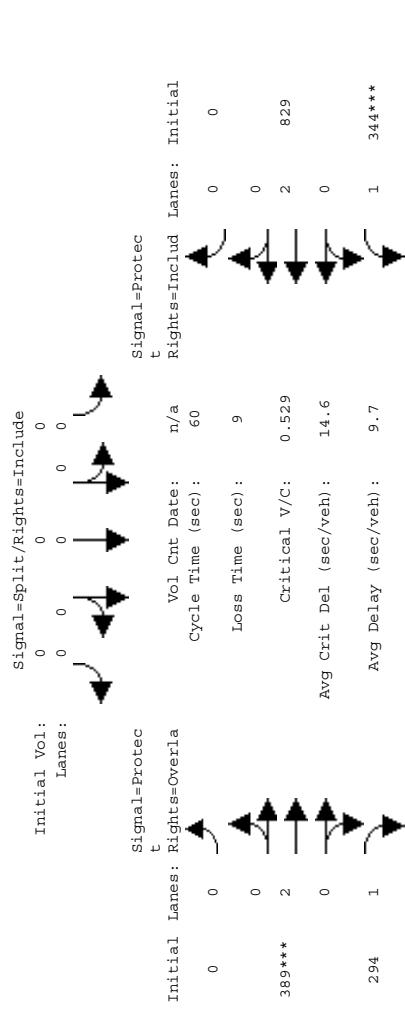
approach: North Bound South Bound East Bound West Bound
Element: L - T - R L - T - R L - T - R L - T - R
-----|-----|-----|-----|-----|-----|-----|-----|
1. Green: | 10 0 10 0 0 0 0 0 10 0 0 10 0
-----|-----|-----|-----|-----|-----|-----|-----|
Volume Module:
-----|-----|-----|-----|-----|-----|-----|-----|
    <= Vol.: 178 0 114 0 0 0 0 0 376 0 0 1027 0
    Growth Adj.: 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17
    Initial Bse.: 209 0 134 0 0 0 0 0 441 0 0 1204 0
    Initial Vol.: 0 122 0 0 0 0 0 90 0 0 885 0
    Improved Pr.: 0 0 0 0 0 0 0 25 0 0 8 0
    Initial Fut.: 209 0 256 0 0 0 0 0 556 0 0 2097 0
    Future Adj.: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
    F Adj.: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
    F Vol.: 209 0 256 0 0 0 0 0 556 0 0 2097 0
    Reduced Vol.: 0 0 0 0 0 0 0 0 0 0 0 0
    Reduced Vol.: 209 0 256 0 0 0 0 0 556 0 0 2097 0
    3 Adj.: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
    3 Adj.: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
    Final Vol.: 209 0 256 0 0 0 0 0 556 0 0 2097 0
-----|-----|-----|-----|-----|-----|-----|-----|
Duration Flow Module:
-----|-----|-----|-----|-----|-----|-----|-----|
    //Lane: 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800
    Adjustment: 0.97 1.06 0.97 1.06 0.97 1.06 0.97 1.06 0.97 1.06 0.97 1.06
    Vol.: 1.00 0.00 1.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
    Initial Sat.: 1750 0 1750 0 0 0 0 0 3800 0 0 3800 0
-----|-----|-----|-----|-----|-----|-----|-----|

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Sat/Asy		Analysis Module:	
0.12	0.00	0.15	0.00 0.00 0.00
*****	*****	*****	*****
Time:	11.3	0.0	11.3 0.0 42.7 0.0 0.0 42.7
Volume/Cap:	0.63	0.00	0.78 0.00 0.00 0.00 0.00 0.78
Lay/Veh:	19.8	0.0	25.1 0.0 0.0 0.0 0.0 5.3 0.0
Lay/Avg:	1.00	1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00
LogAgJFctr:	1.00	1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00
Del/Veh:	19.8	0.0	25.1 0.0 0.0 0.0 0.0 5.3 0.0
minQueue:	6	0	7 0 0 0 0 2 0 0 24 0

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM Peak

Intersection #5: Moffett/101 SB Ramps
Intersection #5: Moffett/101 SB Ramps
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1



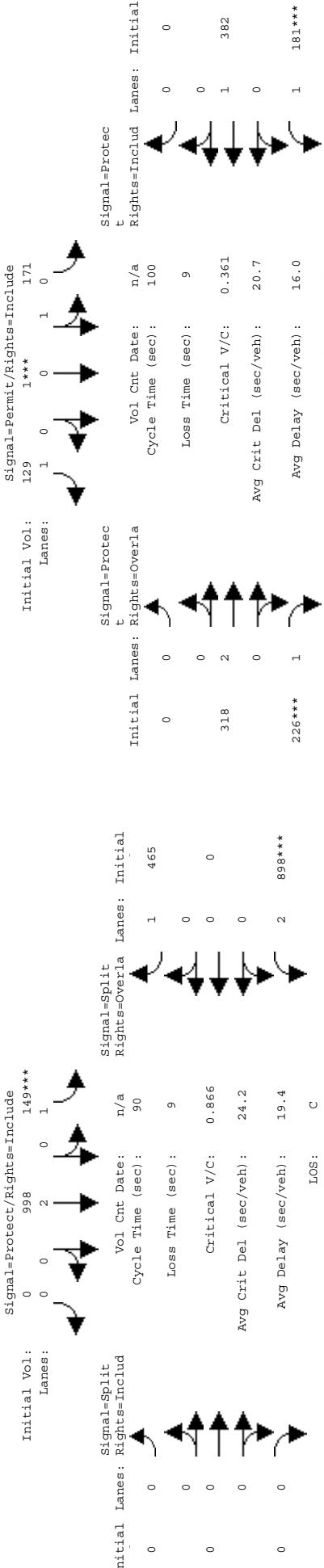
Approach:	North Bound	South Bound	East Bound	West Bound					
Movement:	L - T - R	L - T - R	L - T - R	L - T - R					
Min. Green:	10 0	10 0	0 0	0 0					
Volume Module:									
Base Vol:	263 0	133 0	0 0	0 0	389 294	344 829	0 0	133 0	344 829
Growth Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.17 1.17	1.17 1.17
Initial Bee:	263 0	133 0	0 0	0 0	389 294	344 829	0 0	156 0	403 972
Added Vol:	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	162 213
PassesByVol:	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Initial Fut:	263 0	133 0	0 0	0 0	389 294	344 829	0 0	194 0	506 370
User Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Volume:	263 0	133 0	0 0	0 0	389 294	344 829	0 0	194 0	506 0
Reduced Vol:	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
PCE Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
MLF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
Final Vol.:	263 0	133 0	0 0	0 0	389 294	344 829	0 0	194 0	506 0
Saturation Flow Module:									
Sat/Lane:	1800 1800	1800 1800	1800 1800	1800 1800	1800 1800	1800 1800	1800 1800	1800 1800	1800 1800
Adjustment:	0.971.06	0.971.06	0.971.06	0.971.06	0.971.06	0.971.06	0.971.06	0.971.06	0.971.06
Lanes:	1.00 0.00	1.00 0.00	0.00 0.00	0.00 0.00	1.00 2.00	1.00 2.00	0.00 0.00	1.00 2.00	1.00 2.00
Final Sat.:	1750 0	1750 0	0 0	0 0	3800 1750	3800 1750	0 0	1750 0	3800 0
Capacity Analysis Module:									
Vol/Sat:	0.15 0.00	0.08 0.00	0.00 0.00	0.00 0.00	0.10 0.17	0.20 0.22	0.00 0.00	0.13 0.00	0.36 0.32 0.00
Crit. Moves:	*****	*****	*****	*****	*****	*****	*****	*****	*****
Green Time:	17.1 0.0	39.4 0.0	0.0 0.0	0.0 0.0	0.11.6 28.7	0.40.9 22.3	0.0 0.0	0.0 0.0	0.0 0.0
Volume/Cap:	0.53 0.00	0.12 0.00	0.00 0.00	0.00 0.00	0.53 0.35	0.53 0.39	0.00 0.00	0.00 0.00	0.79 0.51 0.00
Delay/Veh:	1.16 0.0	2.9 0.0	0.0 0.0	0.0 0.0	0.17.1 7.6	11.9 5.6	0.0 0.0	0.0 0.0	14.5 5.0 0.0
Delay Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
ProgAdjFcrr:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
AddJl/Veh:	14.6 0.0	2.9 0.0	0.0 0.0	0.0 0.0	17.1 7.6	11.9 5.6	0.0 0.0	0.0 0.0	14.5 5.0 0.0
DesignQueue:	7 0	2 0	0 0	0 0	11 5	13 5	0 0	0 0	13 17 0

Intersection #5: Moffett/101 SB Ramps
Intersection #5: Moffett/101 SB Ramps
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

Approach:	North Bound	South Bound	East Bound	West Bound					
Movement:	L - T - R	L - T - R	L - T - R	L - T - R					
Min. Green:	10 0	10 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Volume Module:									
Base Vol:	263 0	133 0	0 0	0 0	389 294	344 829	0 0	133 0	344 829
Growth Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.17 1.17	1.17 1.17
Initial Bee:	263 0	133 0	0 0	0 0	389 294	344 829	0 0	156 0	403 972
Added Vol:	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	162 213
PassesByVol:	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Initial Fut:	263 0	133 0	0 0	0 0	389 294	344 829	0 0	194 0	506 370
User Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Volume:	263 0	133 0	0 0	0 0	389 294	344 829	0 0	194 0	506 0
Reduced Vol:	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
PCE Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
MLF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
Final Vol.:	263 0	133 0	0 0	0 0	389 294	344 829	0 0	194 0	506 0
Saturation Flow Module:									
Sat/Lane:	1800 1800	1800 1800	1800 1800	1800 1800	1800 1800	1800 1800	1800 1800	1800 1800	1800 1800
Adjustment:	0.971.06	0.971.06	0.971.06	0.971.06	0.971.06	0.971.06	0.971.06	0.971.06	0.971.06
Lanes:	1.00 0.00	1.00 0.00	0.00 0.00	0.00 0.00	1.00 2.00	1.00 2.00	0.00 0.00	1.00 2.00	1.00 2.00
Final Sat.:	1750 0	1750 0	0 0	0 0	3800 1750	3800 1750	0 0	3800 1750	3800 0
Capacity Analysis Module:									
Vol/Sat:	0.18 0.00	0.11 0.00	0.00 0.00	0.00 0.00	0.13 0.00	0.00 0.00	0.00 0.00	0.32 0.00	0.00 0.00
Crit. Moves:	*****	*****	*****	*****	*****	*****	*****	*****	*****
Green Time:	13.7 0.0	40.9 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
Volume/Cap:	0.79 0.00	0.16 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.79 0.51	0.00 0.00
Delay/Veh:	23.6 0.0	2.6 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	22.9 0.0	0.0 0.0
Delay Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
ProgAdjFcrr:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
AddJl/Veh:	23.6 0.0	2.6 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	22.9 0.0	0.0 0.0
DesignQueue:	9 0	2 0	0 0	0 0	0 0	0 0	0 0	15 0	0 0

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 4

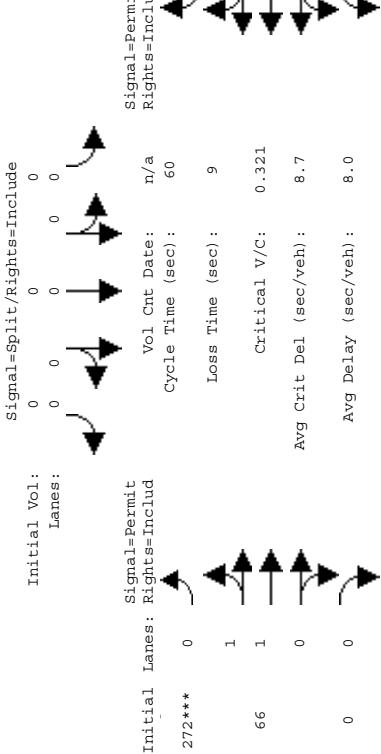
Level Of Service Computation Report
85 HCM Operations (Future Volume Alternative)
PM Peak



Lanes:		0	0	1	1	0		Initial Vol:		0	0	1144***	369		Signal=Protect/Rights-Overlap		0	0	0	0	0	
Approach:	North Bound		South Bound		East Bound		West Bound								Lanes:	0	0	0	0	0		
Movement:	L - T - R		L - T - R		L - T - R		L - T - R								Initial Vol:	0	0	0	0	0		
Min. Green:	0	10	10	7	10	0	0	0							Signal=Permit/Rights-Ignore	0	0	0	0	0		
Volume Module:	0	783	154	106	586	0	0	0							Approach:	North Bound	South Bound	East Bound	West Bound			
Base Use Vol:	0	1.17	1.17	1.17	1.17	1.17	1.17	1.17							Movement:	L - T - R	L - T - R	L - T - R	L - T - R			
rowth Adj:	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17							Min. Green:	0	0	0	0	0		
Initial Bse:	0	918	181	124	687	0	0	0							Volume Module:							
Added Vol:	0	39	45	6	111	0	0	0							Base Vol:	0	0	0	0	0		
Optimal Pr:	0	187	143	19	200	0	0	0							Growth Adj:	1.00	1.00	1.00	1.00	1.00		
Optimal Fct:	0	1144	369	149	998	0	0	0							Initial Bse:	0	0	0	0	0		
Optimal Fct Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							Added Vol:	0	0	0	0	0		
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							PasserByVol:	0	0	0	0	0		
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							Initial Fct:	0	0	0	0	0		
PHF Adj:	1.00	1144	369	149	998	0	0	0							User Adj:	1.00	1.00	1.00	1.00	1.00		
PHF Volume:	0	0	0	0	0	0	0	0							PHF Adj:	1.00	1.00	1.00	1.00	1.00		
Product Vol:	0	0	0	0	0	0	0	0							PHF Volume:	0	0	0	0	0		
Reduced Vol:	0	1144	369	149	998	0	0	0							Reduc Vol:	0	0	0	0	0		
TE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							Reduced Vol:	0	0	0	0	0		
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							PCE Adj:	1.00	1.00	1.00	1.00	1.00		
MLF Adj:	1.00	1144	369	149	998	0	0	0							MLF Adj:	1.00	1.00	1.00	1.00	1.00		
Final Vol.:	0	0	0	0	0	0	0	0							Final Vol.:	0	0	0	0	0		
Saturation Flow Module:																						
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800							Crit Moves:	0	0	0	0	0		
Adjustment:	0.97	1.04	1.00	0.97	1.06	0.97	0.88	1.06							Green Time:	0.0	0.0	0.0	26.5	0.0		
Lanes:	0.0	1.50	0.50	1.00	2.00	0.00	0.00	2.00							Volume/Cap:	0.00	0.00	0.00	0.36	0.00		
Final Sat.:	0	2797	902	1750	3800	0	0	0							Delay/Veh:	0.0	0.0	0.0	22.9	0.0		
Capacity Analysis Module:																						
Vol/Sat:	0.0	0.41	0.41	0.09	0.26	0.00	0.00	0.00							Delay Adj:	1.00	1.00	1.00	1.00	1.00		
crit Moves:	0.0	42.5	72.1	8.9	51.4	0.0	0.0	0.0							ProgAdjctr:	1.00	1.00	1.00	1.00	1.00		
Enr Time:	0.0	0.87	0.51	0.87	0.46	0.00	0.00	0.00							AdjDel/Veh:	0.0	0.0	0.0	22.9	0.0		
Volume/Cap:	0.0	0.19	0.16	2.4	53.7	8.7	0.0	0.87							DesignQueue:	0	0	0	22.9	0.0		
Delay/Veh:	0.0	1.00	1.00	1.00	1.00	1.00	1.00	1.00							AdjDel/Veh:	0.0	0.0	0.0	22.9	0.0		
Final Sat.:	0	2797	902	1750	3800	0	0	0							DesignQueue:	0	0	0	22.9	0.0		

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM Peak

Level Of Service Computation Report
HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

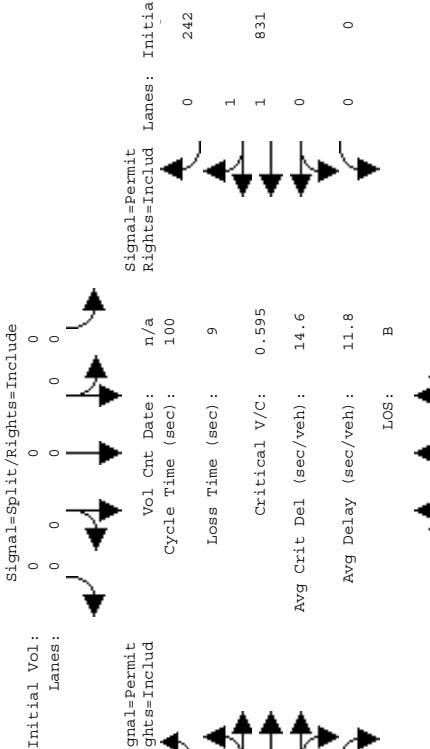


Initial Vol : 212***
Lanes : 1 0 0 0 1
Signal=Split/Rights=Include 58

Approach:	North Bound	South Bound	East Bound	West Bound
L - T - R movement:	-----	-----	-----	-----
Min. Green:	10 10 10	0 0 0	10 10 0	0 10 0
Volume Module:	-----	-----	-----	-----
Base Vol:	212 18 58	0 0 0	272 66 0	0 355 170
Growth Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Additional Base:	212 18 58	0 0 0	272 66 0	0 355 170
PasserbyVol:	0 0 0	0 0 0	0 0 0	0 0 0
Initial Vol:	212 18 58	0 0 0	272 66 0	0 355 170
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HFH Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HFH Volume:	212 18 58	0 0 0	272 66 0	0 355 170
Reduced Vol:	0 0 0	0 0 0	0 0 0	0 0 0
Reduced Vol:	212 18 58	0 0 0	272 66 0	0 355 170
PFCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
MLF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Vol.:	212 18 58	0 0 0	272 66 0	0 355 170
Saturation Flow Module:	-----	-----	-----	-----
sat/Lane:	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800
Adj/adjustment:	1.00 1.00 1.00	0.97 1.06 0.97	1.06 0.97 1.06	0.97 1.04 1.00
lanes:	1.00 0.24 0.76	0.00 0.00 0.00	1.00 1.00 1.00	0.00 1.33 0.67
Final Sat.:	1800 426 1374	0 0 0	1750 1900 0	0 2501 1198
Capacity Analysis Module:	-----	-----	-----	-----
Vol/Sat:	0.12 0.04 0.04	0.00 0.00 0.00	0.16 0.03 0.00	0.00 0.14 0.14
Unit Moves:	*****			
Volume/Cap:	0.32 0.12 0.12	0.00 0.00 0.00	0.32 0.07 0.00	0.00 0.29 0.29
Delay/Veh:	10.4 9.6 9.6	0.0 0.0 0.0	7.3 6.3 0.0	0.0 7.1 7.1
Delay/Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
ProgrAdj/ctfr:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Del/Veh:	10.4 9.6 9.6	0.0 0.0 0.0	7.3 6.3 0.0	0.0 7.1 7.1
Questionnaire:	5 1 0	0 0 0	5 1 0	0 6 3

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

Level Of Service Computation Report
85 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

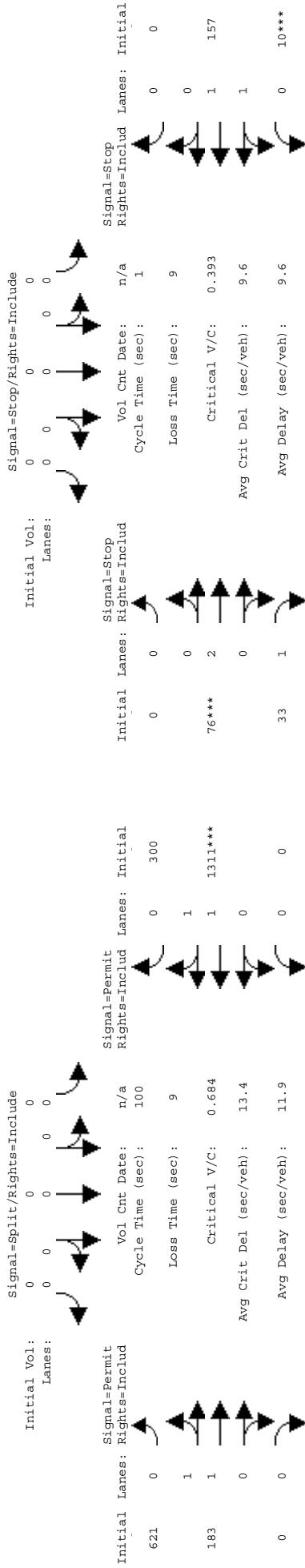


Lanes: 1 0 0 0 1
Initial Vol: 336*** 21 35
Signal=Split/Rights=Include

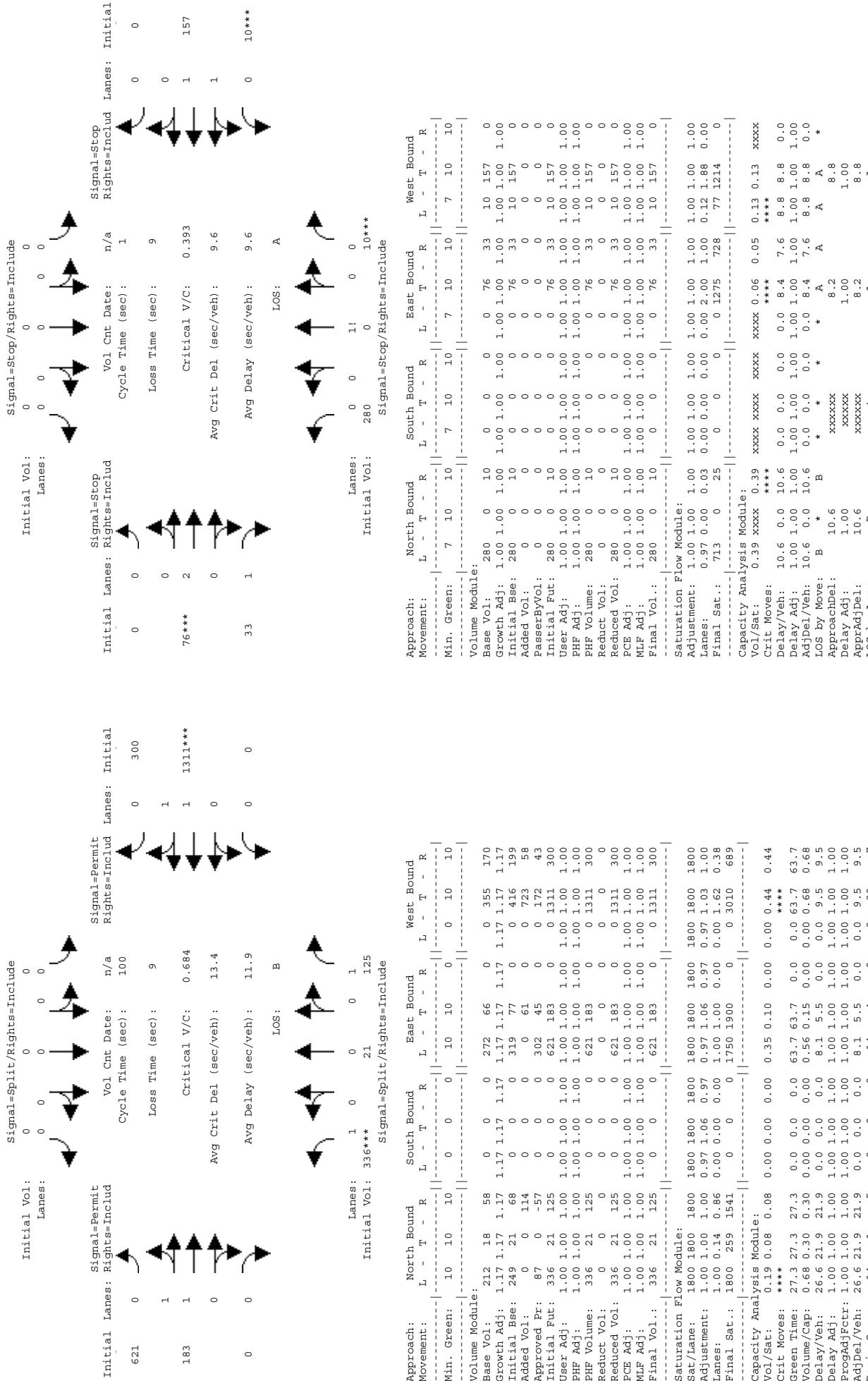
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 4

Level Of Service Computation Report
1997 HCM 4-Way Stop (Future Volume Alternative)
PM Peak

Intersection #11: Ellis/101 NB Ramps



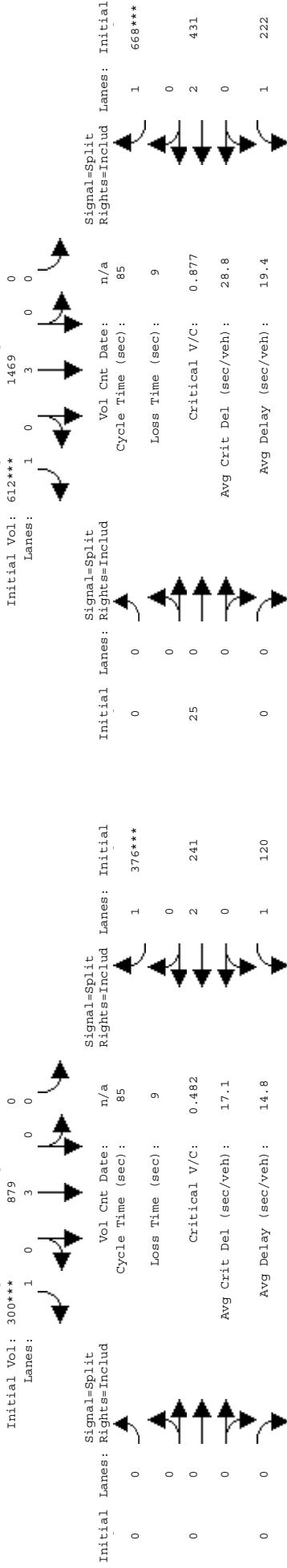
Intersection #12: Ellis/Manila



Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM Peak

Intersection #13: 237 WB Ramps/Middlefield

Signal=Protect/Rights=Include



Initial Vol: 141***
Lanes: 0 0 0 0
Signal=Protect/Rights=Include



Initial Vol: 141***
Lanes: 2 0 2 0
Signal=Protect/Rights=Include



Initial Vol: 165***
Lanes: 2 0 2 0
Signal=Protect/Rights=Include

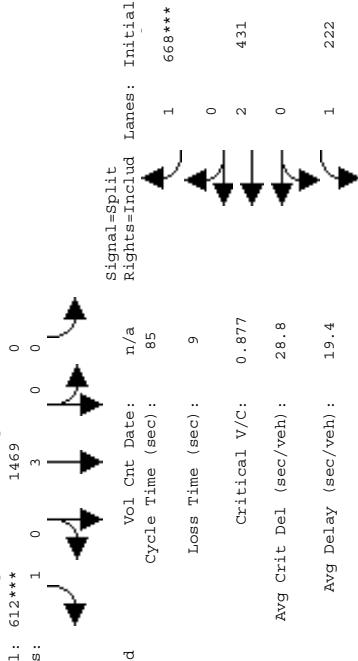


Approach:	North Bound	South Bound	East Bound	West Bound	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	7 10	0 0	10 0	0 0	0 10	0 0	10 0	0 0
Volume Module:								
Base Vol:	141	321	0	0	879	300	0	120
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bce:	141	321	0	0	879	300	0	120
Added Vol:	0	0	0	0	0	0	0	0
Approved Pr:	0	0	0	0	0	0	0	0
Initial Fct:	141	321	0	0	879	300	0	120
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	141	321	0	0	879	300	0	120
Reducit Vol:	0	0	0	0	0	0	0	0
Reduced Vol:	141	321	0	0	879	300	0	120
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	141	321	0	0	879	300	0	120
Saturation Flow Module:								
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.88	1.06	0.97	1.06	0.97	1.06	0.97	1.06
Lanes:	2.00	2.00	0.00	0.00	3.00	1.00	2.00	1.00
Final Sat.:	3150	3800	0	0	5700	1750	0	1750
Capacity Analysis Module:								
Vol/Sat:	0.04	0.08	0.00	0.00	0.15	0.17	0.00	0.06
Crit Moves:	*****							
Green Time:	7.9	38.1	0.0	0.0	30.2	30.0	0.0	37.9
Volume/Cap:	0.48	0.19	0.00	0.00	0.43	0.48	0.00	0.14
Delay/Veh:	28.8	10.7	0	0	16.0	16.7	0	10.7
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AddDel/Veh:	28.8	10.7	0	0	16.0	16.7	0	10.7
DesInqueue:	6	9	0	0	28	10	0	3

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

Intersection #13: 237 WB Ramps/Middlefield

Signal=Protect/Rights=Include



Initial Vol: 165***
Lanes: 2 0 2 0
Signal=Protect/Rights=Include

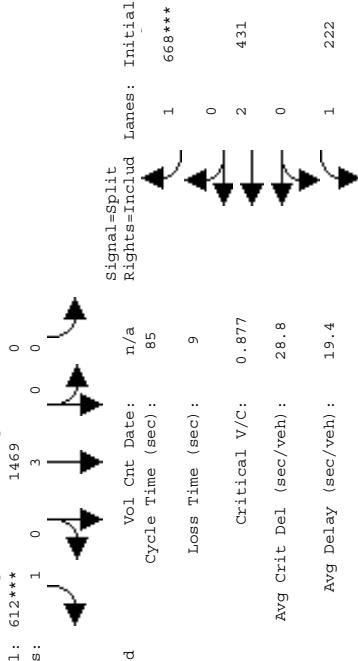


Initial Vol:	668***	1	
Lanes:	0	0	0
Signal-Split Rights=Includ			
Vol Cnt Date:	n/a	85	
Cycle Time (sec):			
Loss Time (sec):	9		
Critical V/C:	0.431		
Avg Crit Del (sec/veh):	24.31		
Avg Delay (sec/veh):	19.4		
LOS:	0		

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM Peak

Intersection #13: 237 WB Ramps/Middlefield

Signal=Protect/Rights=Include



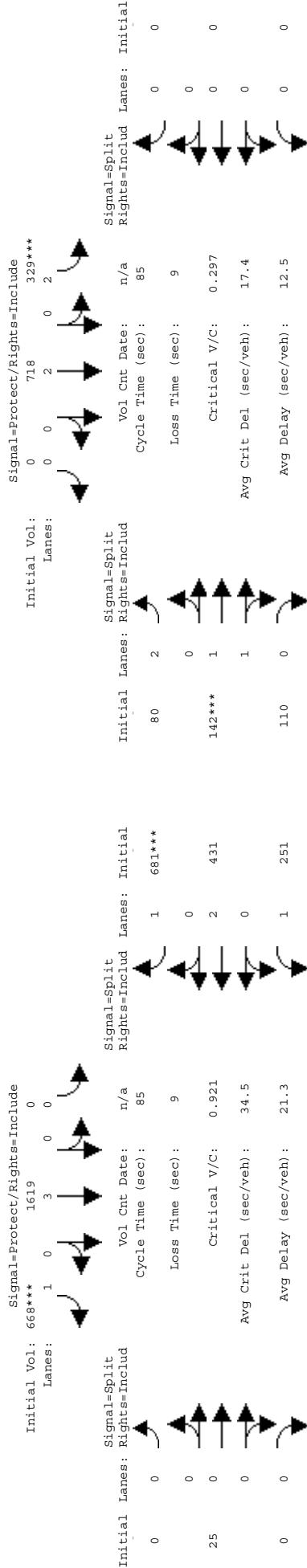
Initial Vol: 165***
Lanes: 2 0 2 0
Signal=Protect/Rights=Include



Initial Vol:	668***	1	
Lanes:	0	0	0
Signal-Split Rights=Includ			
Vol Cnt Date:	n/a	85	
Cycle Time (sec):			
Loss Time (sec):	9		
Critical V/C:	0.431		
Avg Crit Del (sec/veh):	24.31		
Avg Delay (sec/veh):	19.4		
LOS:	0		

Level Of Service Computation Report
 1985 HCM Operations (Future Volume Alternative)
 PM 2013 Project Alt. 4

Level Of Service Computation Report 985 HCM Operations (Future Volume Alternative) PM Peak



Lanes: 2
Initial Vol: 165***
Signal=Protect/Rights=Include

approach:	North Bound	South Bound	East Bound	West Bound
L - T - R	L - T - R	L - T - R	L - T - R	
movement:	-	-	-	-
in. Green:	7 10	0	10	0
Volume Module:	-	-	-	-
base Vol.:	141 321	0	0 879	300 0
Growth Adj.:	1.17 1.17	1.17 1.17	1.17 1.17	1.17 1.17
Initial Bee:	165 376	0	1030 352	0 0
Added Vol.:	0 71	0	208 106	0 0
Approved Pr.:	0 132	0	0 381	210 0
Initial Fut.:	165 579	0	0 1619	668 0
User Adj.:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
HF Adj.:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
HF Volume:	165 579	0	0 1619	668 0
Reduced Vol.:	0 0	0 0	0 0	0 0
Reduced Vol.:	165 579	0	0 1619	668 0
CE Adj.:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
MLF Adj.:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
Final Vol.:	165 579	0	0 1619	668 0
Saturation Flow Module:	-	-	-	-
sat./Lane:	1800 1800	1800 1800	1800 1800	1800 1800
adjustment:	0.88 1.06	0.97 1.06	0.97 1.06	0.97 1.06
lanes:	2.00 2.00	0.10 0.10	0.10 0.10	0.10 0.10
initial Sat.:	3150 3800	0	0 5700	1750 0
Capacity Analysis Module:	-	-	-	-
Vol/Sat:	0.05 0.15	0.00 0.28	0.38 0.00	xxxxx 0.00
crit Moves:	****	****	****	****
Green Time:	7.0 41.2	0.0 0.0	34.2 0.0	0.0 0.0
Volume/Cap:	0.64 0.31	0.00 0.00	0.71 0.95	0.00 xxxx 0.00
Delay/Yeh:	32.2 10.2	0.0 0.0	16.9 35.1	0.0 0.0
Delay Adj.:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
ProgAdj/Fctr:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
AdjDelay/Yeh:	32.2 10.2	0.0 0.0	16.9 35.1	0.0 0.0
AdjSat/Yeh:	7.15	0	49 21	0 0
AdjTime/Yeh:	7	0	49 21	0 0

1985 Level Of Service Computation Report
HCM Operations (Future Volume Alternative)
PM Peak

Diagram illustrating traffic flow through a four-lane intersection under different signal control scenarios:

- Top Row (Signal=Protect/Rights=Include):**
 - Initial Vol:** 0 Lanes: 0 0 0 0
 - 718 Lanes:** 0 2 0 2
 - 329*** Lanes:** 0 0 2 0
- Bottom Row (Signal=Split/Rights=Includ):**
 - Initial Vol:** 80 Lanes: 2 0 0 0
 - 142*** Lanes:** 1 0 1 0
 - 1110 Lanes:** 0 0 0 0

Legend for Lane Numbers and Vehicle Types:

- 1: Car (Black triangle)
- 2: Bus (White triangle)
- 3: Truck (White triangle with dot)
- 4: Car (Black triangle)

Legend for Traffic Flow Direction:

- Up: Upward arrow
- Down: Downward arrow
- Left: Leftward arrow
- Right: Rightward arrow

Key parameters shown in the diagrams:

- Vol Cnt Date:** n/a
- Cycle Time (sec):** 85
- Loss Time (sec):** 9
- Critical V/C:** 0.297
- Avg Crit Del (sec/veh):** 17.4
- Avg Delay (sec/veh):** 12.5
- LOS:** B
- Lanes:** 0 0 4 0 1
- Initial Vol:** 0 431 162***
- Signal=Protect/Rights=Include**
- Signal=Split/Rights=Includ**

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	0	10	10	7	10	0	7	10	10	0	0	0
Volume Module:												
Base Vol:	0	431	162	329	718	0	80	142	110	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	431	162	329	718	0	80	142	110	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Put:	0	431	162	329	718	0	80	142	110	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	431	162	329	718	0	80	142	110	0	0	0
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1.00	431	162	329	718	0	80	142	110	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	431	162	329	718	0	80	142	110	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1600	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	0.88	1.06	0.97	0.88	1.05	1.00	0.97	1.06	0.97
Lanes:	0.00	4.00	0.00	2.00	2.00	0.00	2.00	1.10	0.90	0.00	0.00	0.00
Final Sat.:	0	7600	1750	3150	3800	0	3150	2084	1614	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.06	0.09	0.10	0.19	0.00	0.03	0.07	0.07	0.00	0.00	0.00
Crit Moves:			****	****	****							
Green Time:	0.0	26.5	26.5	29.5	56.5	0.0	19.5	19.5	19.5	0.0	0.0	0.0
Volume/Cap:	0.00	0.18	0.30	0.30	0.28	0.00	0.11	0.30	0.30	0.00	0.00	0.00
Delay/Veh:	0.0	16.2	16.9	15.2	4.5	0.0	19.7	20.6	20.6	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AddEl/Veh:	0.0	16.2	16.9	15.2	4.5	0.0	19.7	20.6	20.6	0.0	0.0	0.0
DesInqueue:	0	14	5	10	12	0	3	4	4	0	0	0

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Initial		Signal=Split Rights=Includ	
Lanes	Vol Cnt Date	Lanes	Avg Delay (sec/veh)
0	1201***	0	12.7
2	n/a	0	0
0	Cycle Time (sec): 85	0	0
2	Loss Time (sec): 9	0	0
160	Critical V/C: 0.453	0	0
201***	Avg Crit Del (sec/veh): 8.5	0	0
1		0	0
1		0	0
0		0	0

Lanes:	0	0	4	0	1
Initial Vol.:	0***		546		207
Signal=Protect/Rights=Include					
approach:	North Bound	South Bound	East Bound	West Bound	
L - T - R	L - T - R	L - T - R	L - T - R		
Min. Green:	0 10	7 10	0 7	10 0	0 0
Volume Module:	-	-	-	-	-
Base Vol.:	0 431	162	329 718	0 80 142	110 0 0
Growth Adj.:	1.17 1.17	1.17 1.17	1.17 1.17	1.17 1.17	1.17 1.17
Initial Base:	0 505	190	386 842	0 94 166	129 0 0
Added Vol.:	0 9	0	58 0	7 0	0 0
Approved Pr.:	0 32	17	186 301	0 59 35	0 0
Initial Fit:	0 546	207	572 1201	0 160 201	129 0 0
User Adj.:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
HF Adj.:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
HF Volume:	0 546	207	572 1201	0 160 201	129 0 0
Reduced Vol.:	0 0	0	0 0	0 0	0 0
Reduced Vol.:	0 546	207	572 1201	0 160 201	129 0 0
PCE Adj.:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
MLF Adj.:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
Final Vol.:	0 546	207	572 1201	0 160 201	129 0 0
Saturation Flow Module:					
Vol/Sat:	1800 1800	1800 1800	1800 1800	1800 1800	1800 1800 1800
Exit Moves:	****	****	****	****	****
Travel Time:	0.00 23.4	23.4	35.9 59.3	0.0 16.7 16.7	16.7 0.0 0.0
Volume/Cap:	0.00 0.26	0.43	0.43 0.45	0.00 0.26 0.45	0.45 0.00 0.00
Delay/Veh:	0.0 18.3	19.7	13.3 4.4	0.0 22.0 23.2	23.2 0.0 0.0
Progrd/Fctr:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Adj/Veh:	0.0 18.3	19.7	13.3 4.4	0.0 22.0 23.2	23.2 0.0 0.0
EstimModule:	0 19	7	16 19	0 6 8	5 0 0

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Diagram illustrating traffic signal timing and vehicle flow at a four-lane intersection. The intersection is divided into four quadrants by dashed lines. The top-left quadrant shows a signal timing diagram with four lanes, labeled "Signal=Protect/Rights=Include" and "Initial Vol: 1378***". The top-right quadrant shows a signal timing diagram with four lanes, labeled "Signal=Split Rights=Include", "Vol Cnt: n/a", "Date: 85", "Cycle Time (sec): 9", and "Loss Time (sec): 0". The bottom-left quadrant shows a signal timing diagram with four lanes, labeled "Critical V/C: 0.505" and "Avg Crit Del (sec/veh): 8.1". The bottom-right quadrant shows a signal timing diagram with four lanes, labeled "Avg Delay (sec/veh): 12.2". Arrows indicate the direction of vehicle flow through each lane.

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Signal=Protect

Lanes:	Initial Vol:	Vol Cnt	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):
1 0	300***	0	n/a	9	0.274	8.3	7.5
1 0	164	0	60				

Signal=Ignore

Lanes:	Initial Vol:	Vol Cnt	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):
1	1	0	23				
1	63***	0					

Signal=Initial

Lanes:	Initial Vol:	Vol Cnt	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):
1	25	1	23				
0	0	0					

Approach:	North Bound	South Bound	East Bound	West Bound
Approach:	$L - T - R$			
Initial Vol.:	0 0	0 0	0 0	0 0
Signal=Split/Rights-Inclusive				
Lanes:	0 0	0 0	0 0	0 0
Initial Vol.:	0 0	0 0	0 0	0 0
Volume Module:				
Base Vol.:	0 0	164 0	308 42	25 0
Brokew Adj.:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
Initial Bse.:	0 0	164 0	308 42	25 0
Added Vol.:	0 0	0 0	0 0	0 0
PassengerVol:	0 0	0 0	0 0	0 0
Initial Fut.:	0 0	164 0	308 42	25 0
User Set Adj.:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
HFE Adj.:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
HF Volume:	0 0	164 0	308 42	25 0
Reduced Vol.:	0 0	0 0	0 0	0 0
OCCE Adj.:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
MFL Adj.:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
Final Vol.:	0 0	164 0	308 42	25 0
Saturation Flow Module:				
Sat/Lane:	1800 1800	1800 1800	1800 1800	1800 1800
Adj/Instrument:	0.97 1.06	0.97 1.06	0.97 1.06	0.97 1.06
Adj/Lanes:	0.00 0.00	0.00 0.00	1.00 1.00	0.00 1.00
Final Sat.:	0 0	0 0	1750 1750	0 1900

	rol/Sat:	0.00	0.00	0.00	0.09	0.00	0.18	0.02	0.01	0.00	0.00	0.03	0.00
crit Moves:							****	****	****	****	****	****	****
crit Time:	0.0	0.0	0.0	0.0	0.34	0.0	0.34	0.0	0.17	0.0	0.0	0.10	0.0
Volume/Cap:	0.00	0.00	0.00	0.00	0.17	0.00	0.31	0.21	0.05	0.00	0.00	0.20	0.00
Delay/Veh:	0.0	0.0	0.0	0.0	0.47	0.0	5.3	18.3	11.9	0.0	0.0	16.4	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdj/Fctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Vene:	0.0	0.0	0.0	0.0	0.47	0.0	5.3	18.3	11.9	0.0	0.0	16.4	0.0
ProgAdj/Vene:	0	0	0	0	0	2	0	5	1	0	0	2	0

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Top Left Diagram (Split Signal):

Initial Vol:	361***	Signal=Split	Rights=Include
Lanes:	1 0 0 0 1		

Top Right Diagram (Protected Signal):

Initial Vol:	361***	Signal=Protected	Rights=Ignore
Lanes:	1 0 0 0 1		

Bottom Left Diagram (Protected Signal):

Initial Vol:	49***	Signal=Protected	Rights=Include
Lanes:	1 0 1 0 0		

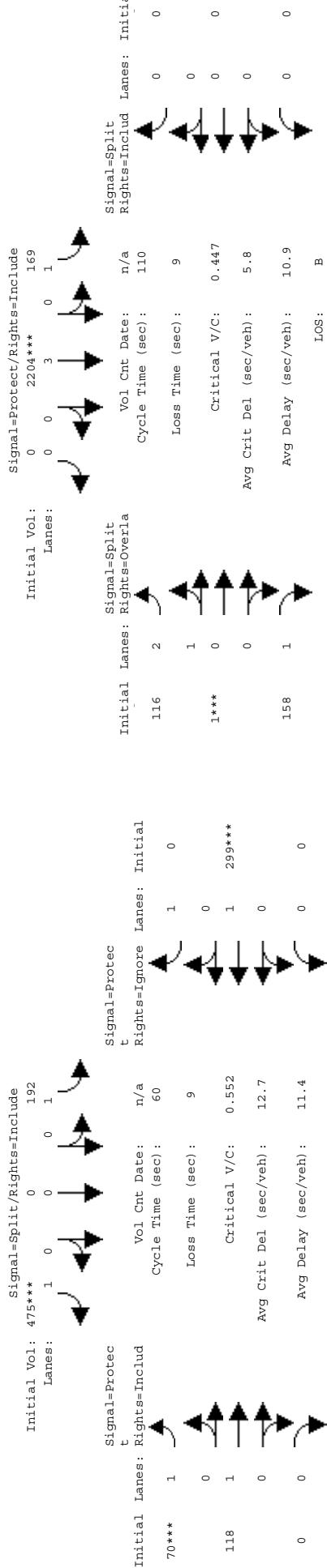
Bottom Right Diagram (Protected Signal):

Initial Vol:	86	Signal=Protected	Rights=Ignore
Lanes:	1 0 1 0 0		

	Vol/Sat:	0.00	0.00	0.00	0.11	0.00	0.21	0.03	0.05	0.00	0.00	0.15	0.00
Crit Moves:							*****	*****	*****	*****	*****	*****	*****
Green Time:	0.00	0.00	0.00	0.00	0.00	0.00	25.3	25.3	0.0	0.0	0.0	0.0	0.0
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.49	0.24	0.11	0.00	0.00
De-Lay/Veh:	0.00	0.00	0.00	0.00	0.00	0.00	8.6	0.0	10.1	18.4	7.8	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProjAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjSel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	8.6	0.0	10.1	18.4	7.8	0.0	0.0
DesignQueue:	0.0	0.0	0.0	0.0	0.0	0.0	8.6	0.0	10.1	18.4	7.8	0.0	0.0

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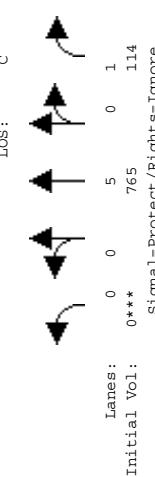
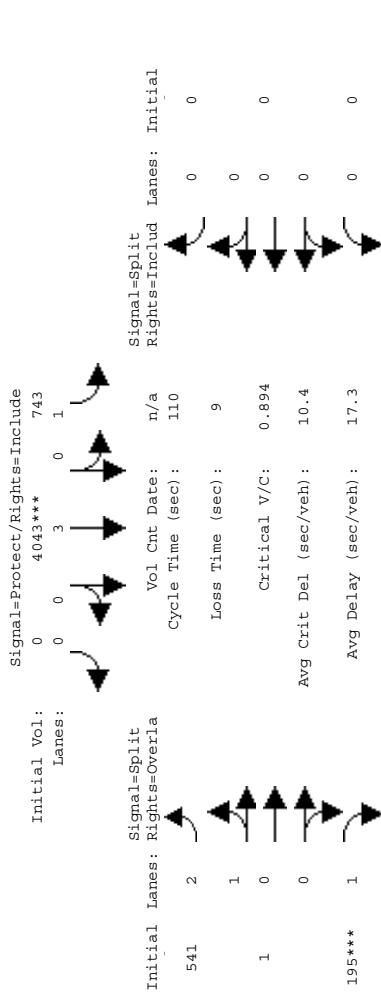


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Intersection #16: 237 EB Ramps/Mathilda



Approach:	North Bound	South Bound	East Bound	West Bound	Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	0 10 10	0 7 10	0 7 10	0 7 10	Min. Green:	0 10 10	0 7 10	0 7 10	0 7 10
Volume Module:					Volume Module:				
Base Vol:	0 373 0	169 2204	0 116 1 158	0 0 0	Base Vol:	0 373 0	169 2204	0 116 1 158	0 0 0
Growth Adj:	1.17 1.17	1.17 1.17	1.17 1.17 1.17 1.17	1.17 1.17	Growth Adj:	1.17 1.17	1.17 1.17	1.17 1.17 1.17 1.17	1.17 1.17
Initial Bee:	0 437 0	198 2554	0 136 1 185	0 0 0	Initial Bee:	0 437 0	198 2554	0 136 1 185	0 0 0
Added Vol:	0 1 0	5 8	0 0 0	0 0 0	Added Vol:	0 25 0	120 128	0 29 0	0 0 0
Approved Pr:	0 327 0	114 1451	0 405 0	0 0 0	Approved Pr:	0 327 0	114 1451	0 405 0	0 0 0
Initial Fut:	0 765 0	114 743 4043	0 541 1 195	0 0 0	Initial Fut:	0 789 0	114 958 4163	0 570 1 195	0 0 0
User Adj:	1.00 1.00	1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00	User Adj:	1.00 1.00	1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00
PHF Adj:	1.00 1.00	1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00	PHF Adj:	1.00 1.00	1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00
PHF Volume:	0 765 0	743 4043	0 541 1 195	0 0 0	PHF Volume:	0 789 0	858 4163	0 570 1 195	0 0 0
Reducit Vol:	0 0 0	0 0 0	0 0 0	0 0 0	Reducit Vol:	0 0 0	0 0 0	0 0 0	0 0 0
PCE Adj:	0 765 0	743 4043	0 541 1 195	0 0 0	PCE Adj:	0 789 0	858 4163	0 570 1 195	0 0 0
MLF Adj:	1.00 1.00	1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00	MLF Adj:	1.00 1.00	1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00
Final Vol.:	0 765 0	743 4043	0 541 1 195	0 0 0	Final Vol.:	0 789 0	858 4163	0 570 1 195	0 0 0
Saturation Flow Module:					Saturation Flow Module:				
Sat/Lane:	1800 1800	1800 1800	1800 1800 1800 1800	1800 1800	Sat/Lane:	1800 1800	1800 1800	1800 1800	1800 1800
Adjustment:	0.97 1.06	0.97 1.06	0.97 1.06 0.97 1.06	0.97 1.06	Adjustment:	0.97 1.06	0.97 1.06	0.97 1.06	0.97 1.06
Lanes:	0 0 5.00	1.00 3.00	0.00 2.99 0.01 1.00 0.00 0.00	0.00 2.99 0.01 1.00 0.00 0.00	Lanes:	0 0 5.00	1.00 3.00	0.00 2.99 0.01 1.00 0.00 0.00	0 0 5.00
Final Sat.:	0 9500 1750	1750 5700	0 4941 9	1750 0	Final Sat.:	0 9500 1750	1750 5700	0 4941 9	1750 0
Capacity Analysis Module:					Capacity Analysis Module:				
Vol/Sat:	0.00 0.08 0.00	0.42 0.71	0.00 0.11 0.11 0.11	0.00 0.00 0.00	Vol/Sat:	0.00 0.08 0.00	0.49 0.73	0.00 0.12 0.12 0.11	0.00 0.00 0.00
Crit Moves:	*****				Crit Moves:	*****			
Green Time:	0.0 10.0	77.3 87.3	0.0 13.7 13.7	0.0 0.0 0.0	Green Time:	0.0 10.0	77.2 87.2	0.0 13.8 13.8	0.0 0.0 0.0
Volume/Cap:	0.00 0.089	0.00 0.60 0.89	0.00 0.88 0.89	0.00 0.00 0.00	Volume/Cap:	0.00 0.091	0.00 0.70 0.92	0.00 0.92 0.92	0.00 0.00 0.00
Delay/Veh:	0.0 45.4	0.0 7.0	0.0 8.1	0.0 45.6 45.6	Delay/Veh:	0.0 47.7	0.0 8.5 9.4	0.0 50.0 50.0	0.0 0.0 0.0
Delay Adj:	1.00 1.00	1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	Delay Adj:	1.00 1.00	1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
ProgAdjFcrt:	1.00 1.00	1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	ProgAdjFcrt:	1.00 1.00	1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
AddDel/Veh:	0.0 45.4	0.0 7.0	0.0 8.1	0.0 45.6 45.6	AddDel/Veh:	0.0 47.7	0.0 8.5 9.4	0.0 50.0 50.0	0.0 0.0 0.0
DesInqueue:	0 43 0	15 63	0 30 0	11 0 0	DesInqueue:	0 45 0	18 65	0 31 0	11 0 0

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signal=Protect/Rights=Include

Figure 1 displays two sets of signal timing diagrams for a four-lane intersection. The top set, labeled "Signal=Protect/Rights=Include", shows a sequence of four green phases followed by a yellow phase and a red phase. The bottom set, labeled "Signal=Split", shows a sequence of four green phases followed by a yellow phase and a red phase. The waveforms are plotted against time, with arrows indicating the start and end of each phase.

Lanes: 1 0 4 0 0
Initial Vol: 148*** 371 0
Signal=Protect/Rights=Include

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signal=Protect/Rights=Include

Figure 1 consists of two sets of four diagrams each, representing different signal timing scenarios. The first set is labeled "Signal=Protect/Rights=Include" and the second set is labeled "Signal=Split". Each set contains four diagrams corresponding to "Initial Vol: 226", "Lanes: 0", "Lanes: 1", and "Lanes: 2,3". Each diagram shows a sequence of green and red arrows indicating vehicle movement over time.

signal=Protect/Rights=Include

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signal=Protect/Rights=Include

Figure 1 consists of two side-by-side signal timing diagrams. The top diagram is for a 2-lane intersection with Signal=Protect/Rights=Include, showing 226 vehicles. The bottom diagram is for a 4-lane intersection with Signal=Split, also showing 226 vehicles. Both diagrams include waveforms for vehicle counts (Vol Cnt), cycle times (Cycle Time (sec)), loss times (Loss Time (sec)), critical vehicle counts (Critical V/C), average critical delay (Avg Crit Del (sec/veh)), and average delay (Avg Delay (sec/veh)).

Parameter	Signal=Protect/Rights=Include (Top)	Signal=Split (Bottom)
Initial Vol:	226	226
Lanes:	2	4
Vol Cnt	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226	
Cycle Time (sec):	110	110
Loss Time (sec):	9	9
Critical V/C:	0.625	0.625
Avg Crit Del (sec/veh):	21.9	21.9
Avg Delay (sec/veh):	20.5	20.5

signal=Protect/Rights=Include

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signal=Protect/Rights=Include

Figure 1 consists of two side-by-side signal timing diagrams. The top diagram is for a 2-lane intersection with Signal=Protect/Rights=Include, showing 226 vehicles. The bottom diagram is for a 4-lane intersection with Signal=Split, also showing 226 vehicles. Both diagrams include waveforms for vehicle counts, cycle times, and critical vehicle counts.

Parameter	Value (2-lane)	Value (4-lane)
Initial Vol:	226	226
Lanes:	2	4
Signal=Protect/Rights=Include	0 1 2 3 0 0	0 1 2 3 0 0
Vol Cnt Date:	n/a	n/a
Cycle Time (sec):	110	110
Loss Time (sec):	9	9
Critical V/C:	0.625	0.625
Avg Crit Del (sec/veh):	21.9	21.9
Avg Delay (sec/veh):	20.5	20.5

signal=Protect/Rights=Include

Level Of Service Computation Report
985 HCM Operations (Future Volume Alternative)
PM Peak

Level Of Service Computation Report
 5 HCM Operations (Future Volume Alternative)
 PM 2013 Project Alt. 1

Intersection #19: Central/Mary

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Approach:	North Bound	South Bound	East Bound	West Bound
L - T - R	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Bse:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Movement:	0 0 0	0 0 0	0 0 0	0 0 0
Min. Green:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Loss Time (sec):	12	12	12	12
Critical V/C:	0.768	0.768	0.768	0.768
Avg Crit Del (sec/veh):	50.4	50.4	50.4	50.4
Avg Delay (sec/veh):	41.8	41.8	41.8	41.8
Initial Vol.: 198	198	198	198	198
Lanes: 0 1 2 0 2	0 1 2 0 2	0 1 2 0 2	0 1 2 0 2	0 1 2 0 2
Signal=Protect/Rights=Include	485***	485***	354	354

Approach:	North Bound	South Bound	East Bound	West Bound
L - T - R	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Bse:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Movement:	0 0 0	0 0 0	0 0 0	0 0 0
Min. Green:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Loss Time (sec):	195	195	195	195
Critical V/C:	0.768	0.768	0.768	0.768
Avg Crit Del (sec/veh):	50.4	50.4	50.4	50.4
Avg Delay (sec/veh):	41.8	41.8	41.8	41.8
Initial Vol.: 90	90	90	90	90
Lanes: 0 2	0 2	0 2	0 2	0 2
Signal=Protect/Rights=Overlap	226	226	226	226

Approach:	North Bound	South Bound	East Bound	West Bound
L - T - R	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Bse:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Movement:	0 0 0	0 0 0	0 0 0	0 0 0
Min. Green:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Loss Time (sec):	145	145	145	145
Critical V/C:	0.768	0.768	0.768	0.768
Avg Crit Del (sec/veh):	50.4	50.4	50.4	50.4
Avg Delay (sec/veh):	41.8	41.8	41.8	41.8
Initial Vol.: 729	729	729	729	729
Lanes: 1 2	1 2	1 2	1 2	1 2
Signal=Protect/Rights=Overlap	226	226	226	226

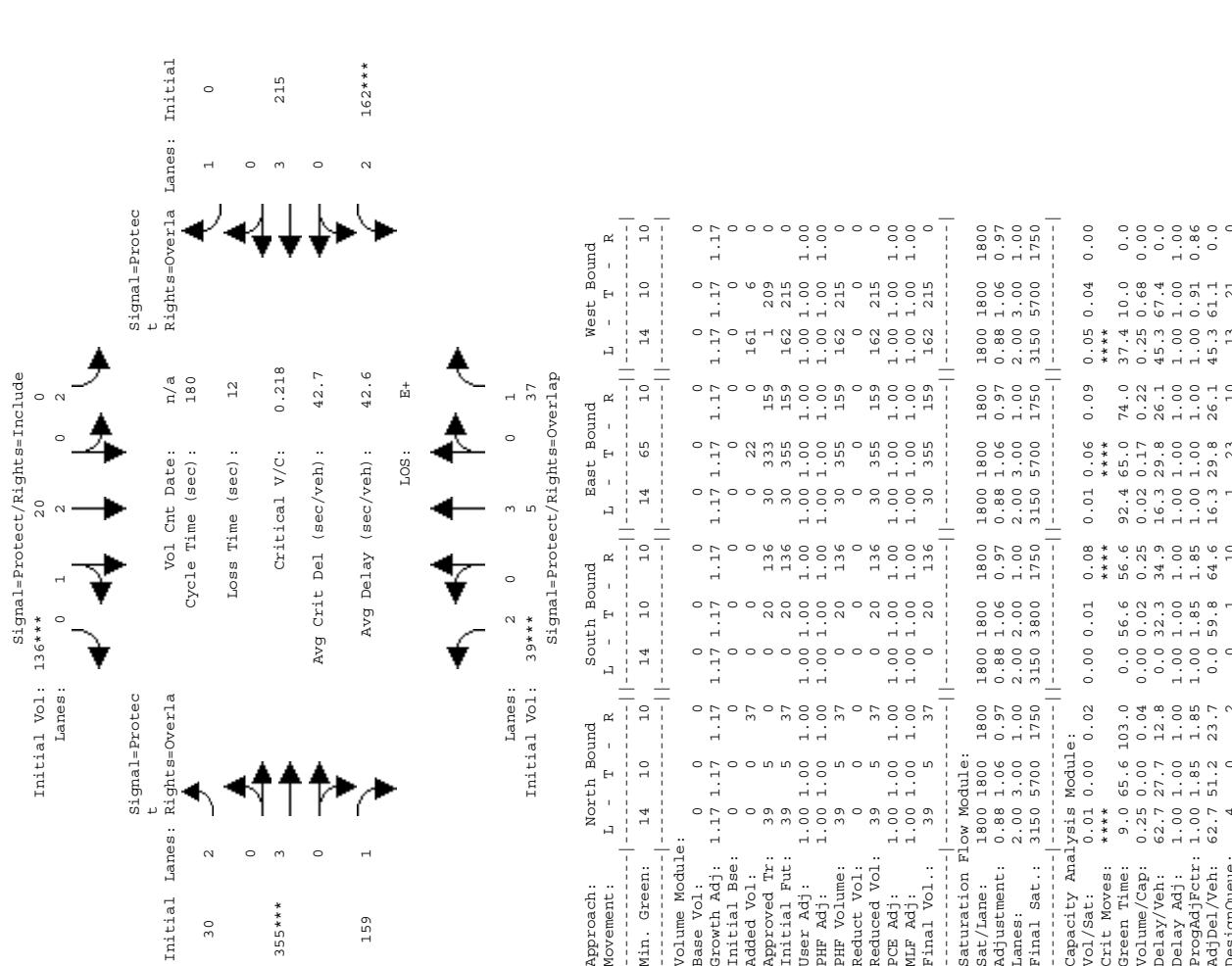
Approach:	North Bound	South Bound	East Bound	West Bound
L - T - R	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Bse:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Movement:	0 0 0	0 0 0	0 0 0	0 0 0
Min. Green:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Loss Time (sec):	140	140	140	140
Critical V/C:	0.768	0.768	0.768	0.768
Avg Crit Del (sec/veh):	50.4	50.4	50.4	50.4
Avg Delay (sec/veh):	41.8	41.8	41.8	41.8
Initial Vol.: 1870***	1870***	1870***	1870***	1870***
Lanes: 0 3	0 3	0 3	0 3	0 3
Signal=Protect/Rights=Overlap	335***	335***	335***	335***

Approach:	North Bound	South Bound	East Bound	West Bound
L - T - R	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Bse:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Movement:	0 0 0	0 0 0	0 0 0	0 0 0
Min. Green:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Loss Time (sec):	140	140	140	140
Critical V/C:	0.768	0.768	0.768	0.768
Avg Crit Del (sec/veh):	50.4	50.4	50.4	50.4
Avg Delay (sec/veh):	41.8	41.8	41.8	41.8
Initial Vol.: 666***	666***	666***	666***	666***
Lanes: 2 2	2 2	2 2	2 2	2 2
Signal=Protect/Rights=Overlap	226	226	226	226

Approach:	North Bound	South Bound	East Bound	West Bound
L - T - R	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Bse:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Movement:	0 0 0	0 0 0	0 0 0	0 0 0
Min. Green:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Loss Time (sec):	140	140	140	140
Critical V/C:	0.768	0.768	0.768	0.768
Avg Crit Del (sec/veh):	50.4	50.4	50.4	50.4
Avg Delay (sec/veh):	41.8	41.8	41.8	41.8
Initial Vol.: 3350	3350	3350	3350	3350
Lanes: 3 3	3 3	3 3	3 3	3 3
Signal=Protect/Rights=Overlap	3942*	3942*	3942*	3942*

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 4

Intersection #19: Central/Mary



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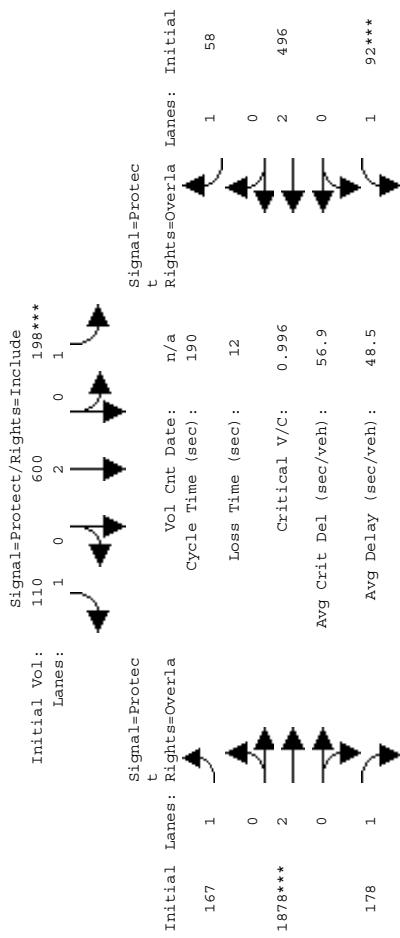
LEVEL OF SERVICE CALCULATIONS:
ALTERNATIVE 5



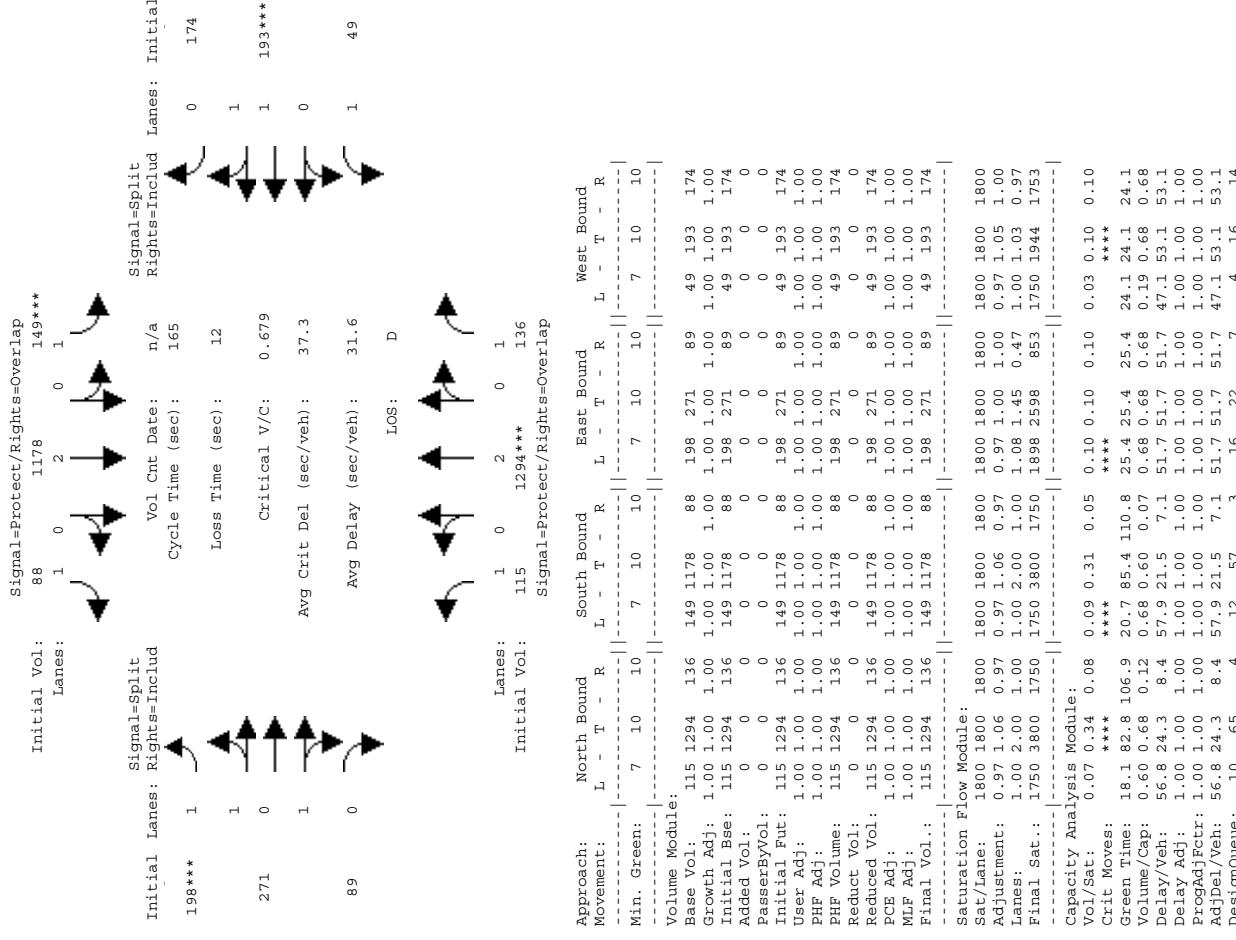
Level Of Service Computation Report
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AM 2013 Project Alt. 5

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM Peak

Intersection #1: Middlefield/Shoreline



Intersection #2: Moffett/Central Expressway



Level Of Service Computation Report
HCM Operations (Future Volume Alternative)
AM Peak

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 5 HCM Operations (Future Volume Alternative)
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Intersection #3: Moffatt/Middlefield

Figure 1 consists of four separate traffic signal timing diagrams, each showing a sequence of green, yellow, and red phases for two lanes. The diagrams are arranged vertically.

Diagram 1:

- Initial Vol: 181
- Lanes: 0 1 1 0 1
- Signal=Protect/Rights=Include
- Cycle Time (sec): 100
- Vol Cnt Date: 9/1/99
- Initial Lanes: Rights=Includ
- Loss Time (sec): 12
- Critical V/C: 0.731
- Avg Crit Del (sec/veh): 26.9
- Avg Delay (sec/veh): 27.0

Diagram 2:

- Initial Vol: 375
- Lanes: 0 1 0 1
- Signal=Protect/Rights=Include
- Cycle Time (sec): 100
- Vol Cnt Date: 9/1/99
- Initial Lanes: Rights=Includ
- Loss Time (sec): 12
- Critical V/C: 0.948
- Avg Crit Del (sec/veh): 41.2
- Avg Delay (sec/veh): 36.1

Diagram 3:

- Initial Vol: 235
- Lanes: 0 1 1 0 1
- Signal=Protect/Rights=Include
- Cycle Time (sec): 100
- Vol Cnt Date: 9/1/99
- Initial Lanes: Rights=Includ
- Loss Time (sec): 12
- Critical V/C: 0.948
- Avg Crit Del (sec/veh): 41.2
- Avg Delay (sec/veh): 36.1

Diagram 4:

- Initial Vol: 770***
- Lanes: 1 1 1 1 1
- Signal=Protect/Rights=Include
- Cycle Time (sec): 100
- Vol Cnt Date: 9/1/99
- Initial Lanes: Rights=Includ
- Loss Time (sec): 12
- Critical V/C: 0.731
- Avg Crit Del (sec/veh): 26.9
- Avg Delay (sec/veh): 27.0

Level Of Service Computation Report
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Level Of Service Computation Report
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 AM Peak

Diagram illustrating traffic flow through a four-lane intersection under different signalization scenarios:

- Initial Vol:** 235 **Lanes:** 0 **Signal=Protect/Rights=Include**
- Initial Vol:** 247 **Lanes:** 1 **Signal=Protect**
- Initial Vol:** 1002*** **Lanes:** 1 **Rights=Includ**
- Initial Vol:** 312 **Lanes:** 0 **Initial**
- Initial Vol:** 312 **Lanes:** 1 **Initial**

Key parameters shown in the diagrams:

Parameter	Value	Unit
Vol Cnt Date:	9/1/99	
Cycle Time (sec):	100	
Loss Time (sec):	12	
Critical V/C:	0.976	
Avg Crit Del (sec/veh):	46.4	
Avg Delay (sec/veh):	39.1	
Initial Lanes:	64	
Initial Lanes:	0	
Initial Lanes:	1	
Initial Lanes:	1	
Initial Lanes:	1	

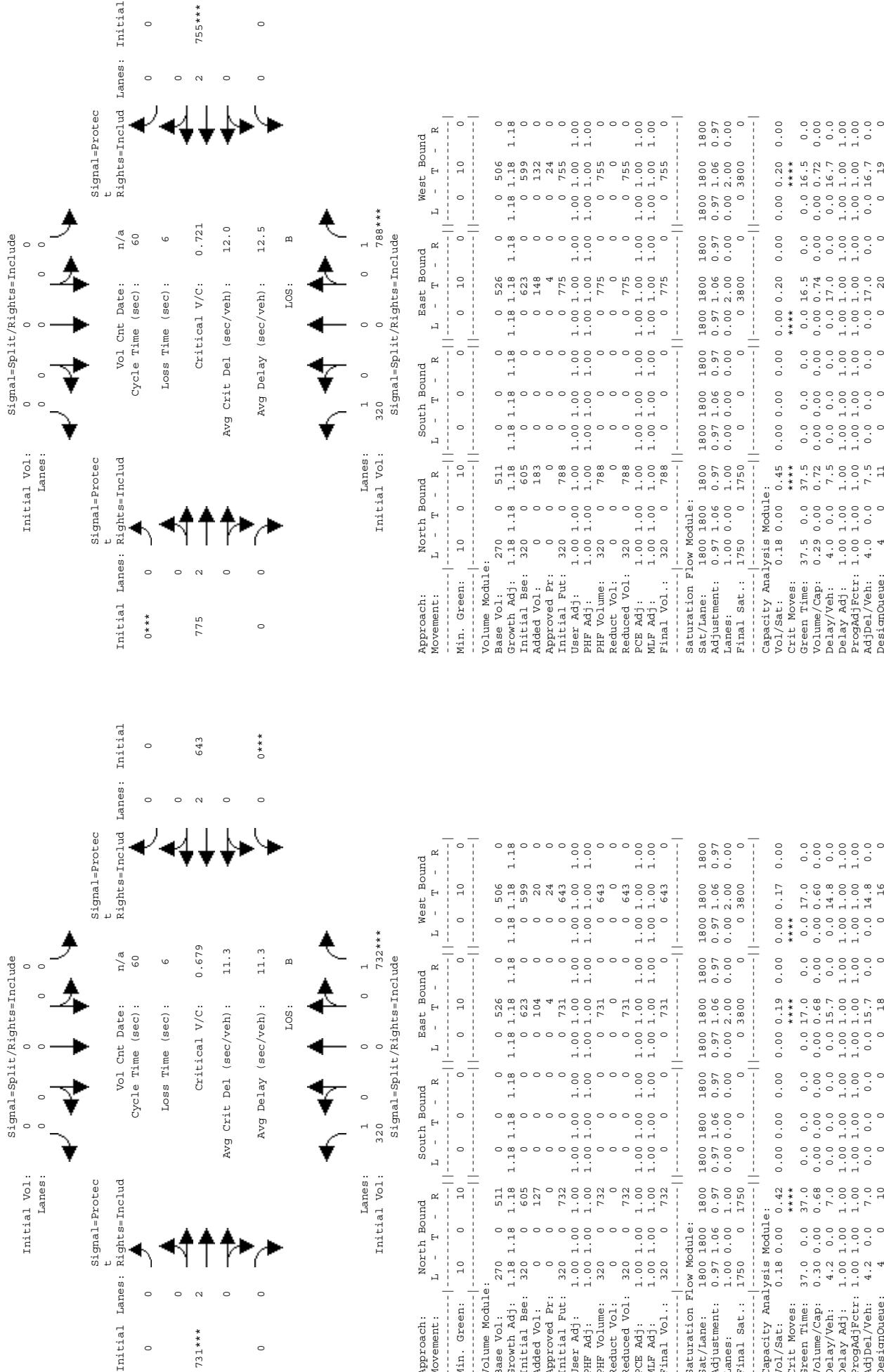
Lanes: 1
Initial Vol: 171
Signal=Protect/Rights=Include

Approach:	North Bound			South Bound			East Bound			West Bound		
	L - T	- R	L - T - R	L	- T	R	L	- T	R	L	- T	R
Movement :	-	-	-	-	-	-	-	-	-	-	-	-
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Volume Module:	>>	Count	Date: 1 Sep 1999	<<								
Base Vol.:	111	248	387	145	375	181	206	770	175	147	500	47
Growth Adj.:	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18
Initial Bse:	131	294	456	172	444	214	244	912	207	174	592	56
Added Vol.:	0	0	39	23	0	0	0	86	0	16	32	8
Approved Pr:	40	32	0	0	180	21	3	4	105	0	24	0
Initial Fitt.	171	326	497	195	624	235	247	1002	312	190	648	64
User Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	171	326	497	195	624	235	247	1002	312	190	648	64
Reducut Vol.:	0	0	0	0	0	0	0	0	0	0	0	0
Reducut Vol.:	171	326	497	195	624	235	247	1002	312	190	648	64
PCE Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	171	326	497	195	624	235	247	1002	312	190	648	64
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	1.04	1.00	0.97	1.04	1.00	0.97	1.03	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.44	0.56	1.00	1.51	0.49	1.00	1.82	0.18
Final Sat.:	1750	1900	1750	1750	2687	1012	1750	2821	878	1750	3367	333
Capacity Analysis Module:												
Vol/Sat:	0.10	0.17	0.28	0.11	0.23	0.23	0.14	0.36	0.36	0.11	0.19	0.19
Crit Moves:				****	****	****	****	****	****	****	****	****
Green Time:	12.0	29.1	29.1	11.4	28.5	28.5	20.1	36.4	36.4	11.1	27.4	27.4
Volume/Cap:	0.81	0.59	0.98	0.98	0.81	0.81	0.70	0.98	0.98	0.98	0.70	0.70
Delay/Ven:	47.0	23.6	45.6	76.0	28.8	28.8	32.5	38.1	38.1	76.7	26.3	26.3
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.0	23.6	45.6	76.0	28.8	28.8	32.5	38.1	38.1	76.7	26.3	26.3

Lanes:	1	0	0	0	1
Initial Vol:	270	0	0	511***	511***
Signal=Split/Rights=Include					
Approach:	North Bound	South Bound	East Bound	West Bound	
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	
Min. Green:	10	0	10	0	0
Volume Module:	-	-	-	-	-
Base Vol:	270	0	511	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00
Initial Bee:	270	0	511	0	0
Added Vol:	0	0	0	0	0
PasserByVol:	0	0	0	0	0
Initial Put:	270	0	511	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00
PHF Volume:	270	0	511	0	0
Reduced Vol:	0	0	0	0	0
Reduced Vol:	270	0	511	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00
Final Vol.:	270	0	511	0	0
Saturation Flow Module:	-	-	-	-	-
Sat/Lane:	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	1.06	0.97
Lanes:	1.00	0.00	1.00	0.00	0.00
Final Sat.:	1750	0	1750	0	0
Capacity Analysis Module:	-	-	-	-	-
Vol/Sat:	0.15	0.00	0.29	0.00	0.00
Crit. Moves:	***	***	***	***	***
Green Time:	36.6	0.0	36.6	0.0	0.0
Volume/Cap:	0.25	0.00	0.48	0.00	0.00
Delay/Veh:	4.1	0.0	5.2	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00
ProgAdjFcrt:	1.00	1.00	1.00	1.00	1.00
AddDel/Veh:	4.1	0.0	5.2	0.0	0.0

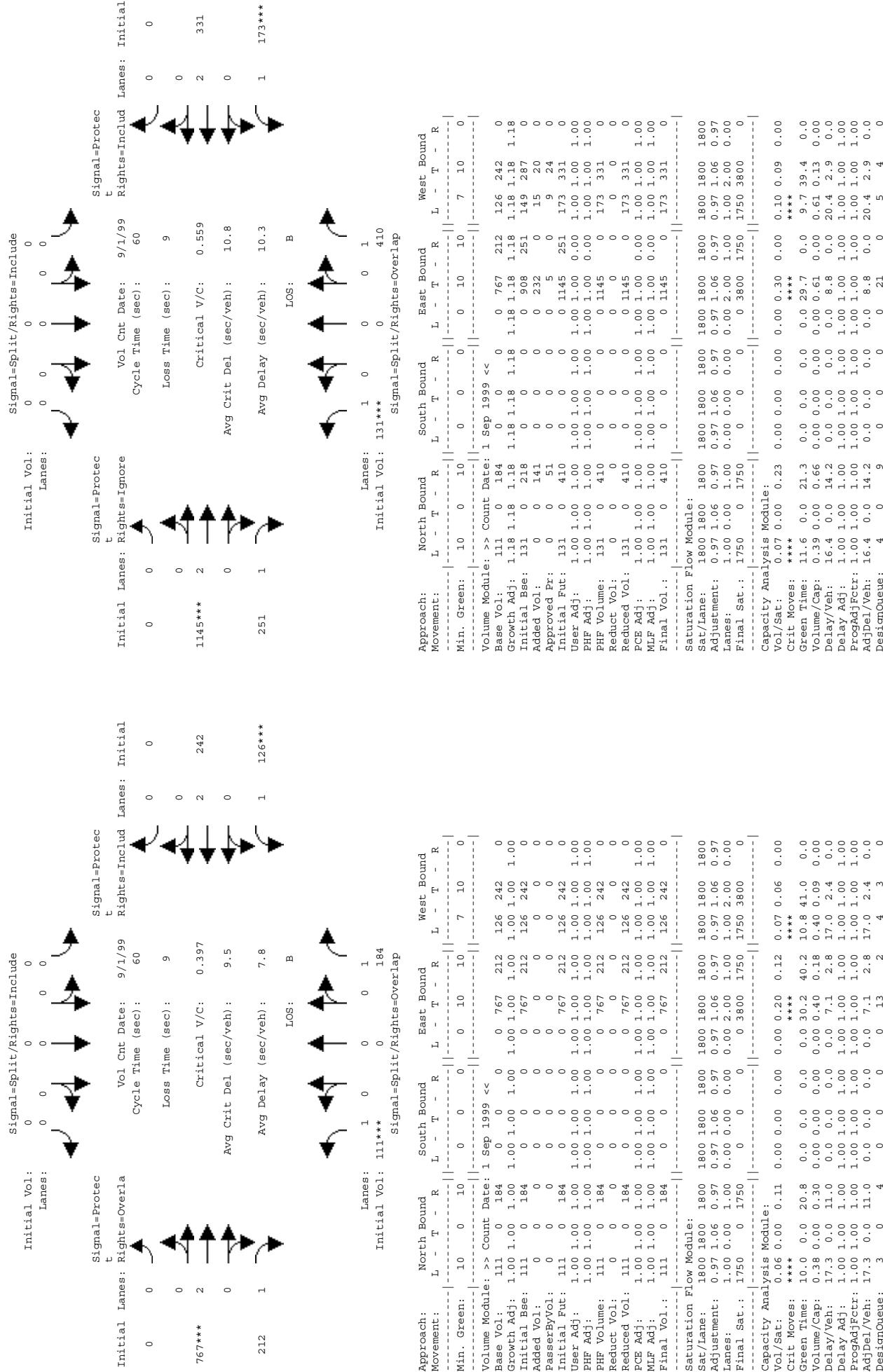
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1

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1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt.: 5



Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM Peak

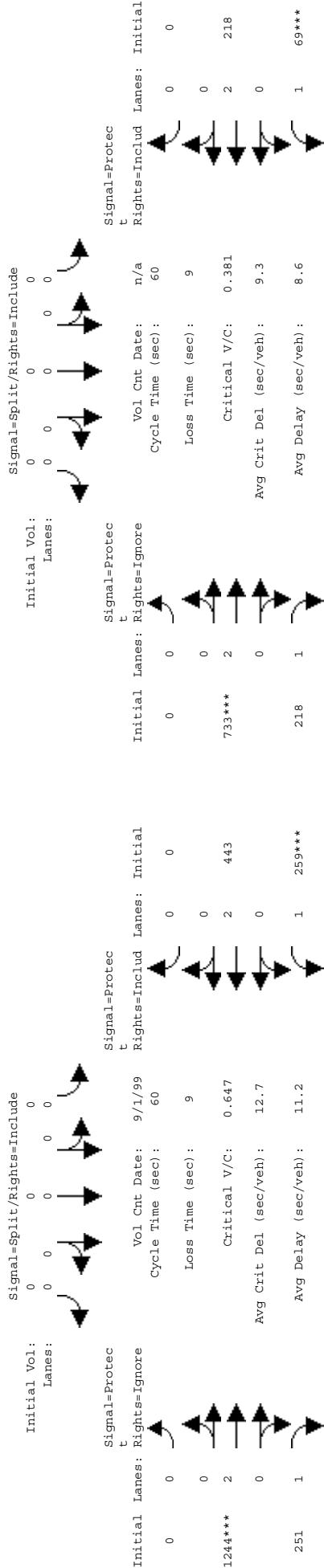
Intersection #5: Moffett/101 SB Ramps
Intersection #5: Moffett/101 SB Ramps
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1



Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 5

Level Of Service Computation Report
 5 HCM Operations (Future Volume Alternative)
 AM Peak

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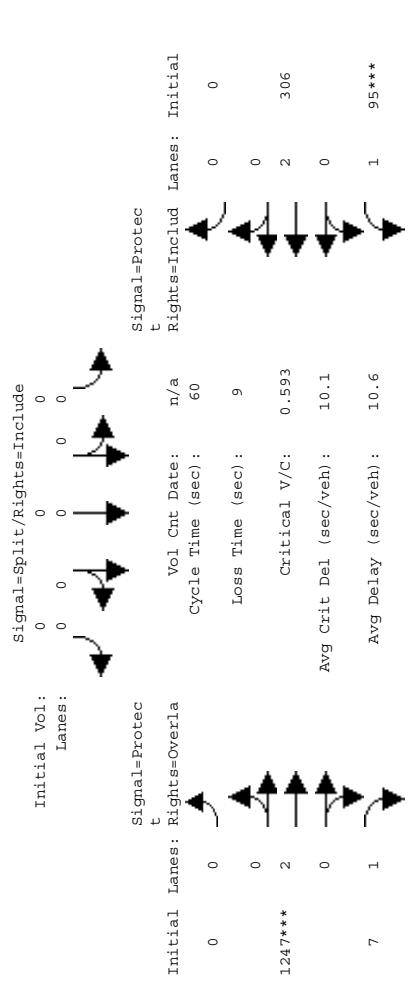
Lanes: 131*** Initial Vol: 468

Signal=Split/Rights=Overlap																								
Approach:	North Bound			South Bound			East Bound			West Bound			Saturation Flow Module:											
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Min. Green:	10	0	10	0	0	0	0	10	10	0	7	10	0	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Volume Module: >> Count Date: 1 Sep 1999 <<																								
Base Vol:	111	0	184	0	0	0	0	767	212	126	242	0	197	0	0	0	733	218	69	218	0	0	0	
Growth Adj:	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Initial Bse:	131	0	218	0	0	0	0	908	251	149	287	0	197	0	0	0	733	218	69	218	0	0	0	
Added Vol:	0	0	199	0	0	0	0	331	0	101	132	0	0	0	0	0	0	0	0	0	0	0	0	
Approved Pk:	0	0	51	0	0	0	0	5	0	9	24	0	0	0	0	0	0	0	0	0	0	0	0	
Initial Fut:	131	0	468	0	0	0	0	1244	251	259	443	0	197	0	0	0	733	218	69	218	0	0	0	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHF Volume:	131	0	468	0	0	0	0	1244	0	259	443	0	197	0	0	0	733	0	69	218	0	0	0	
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	131	0	468	0	0	0	0	1244	0	259	443	0	197	0	0	0	733	0	69	218	0	0	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Final Vol.:	131	0	468	0	0	0	0	1244	0	259	443	0	197	0	0	0	733	0	69	218	0	0	0	
Saturation Flow Module:																								
Crit Moves: ***																								
Green Time:	10.2	0.0	22.9	0.0	0.0	0.0	0.0	28.1	0.0	12.7	40.8	0.0	21.1	0.0	0.0	0.0	29.9	0.0	7.0	36.9	0.0	0	0	
Volume/Cap:	0.44	0.00	0.70	0.00	0.00	0.00	0.00	0.70	0.00	0.70	0.17	0.00	0.32	0.00	0.00	0.00	0.39	0.00	0.34	0.09	0.00	0	0	
Delay/Veh:	17.6	0.0	14.1	0.0	0.0	0.0	0.0	0.0	0.0	10.9	0.0	0.0	0.0	0.0	0.0	0.0	7.2	0.0	18.9	3.6	0.0	0	0	
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
AddDelVeh:	17.6	0.0	14.1	0.0	0.0	0.0	0.0	0.0	0.0	10.5	0.0	0.0	0.0	0.0	0.0	0.0	7.2	0.0	18.9	3.6	0.0	0	0	
DesSyncLane:	4	0	10	0	0	0	0	0	0	0	0	0	0.9	0.0	0.0	0.0	0.72	0.0	2	3	0	0	0	

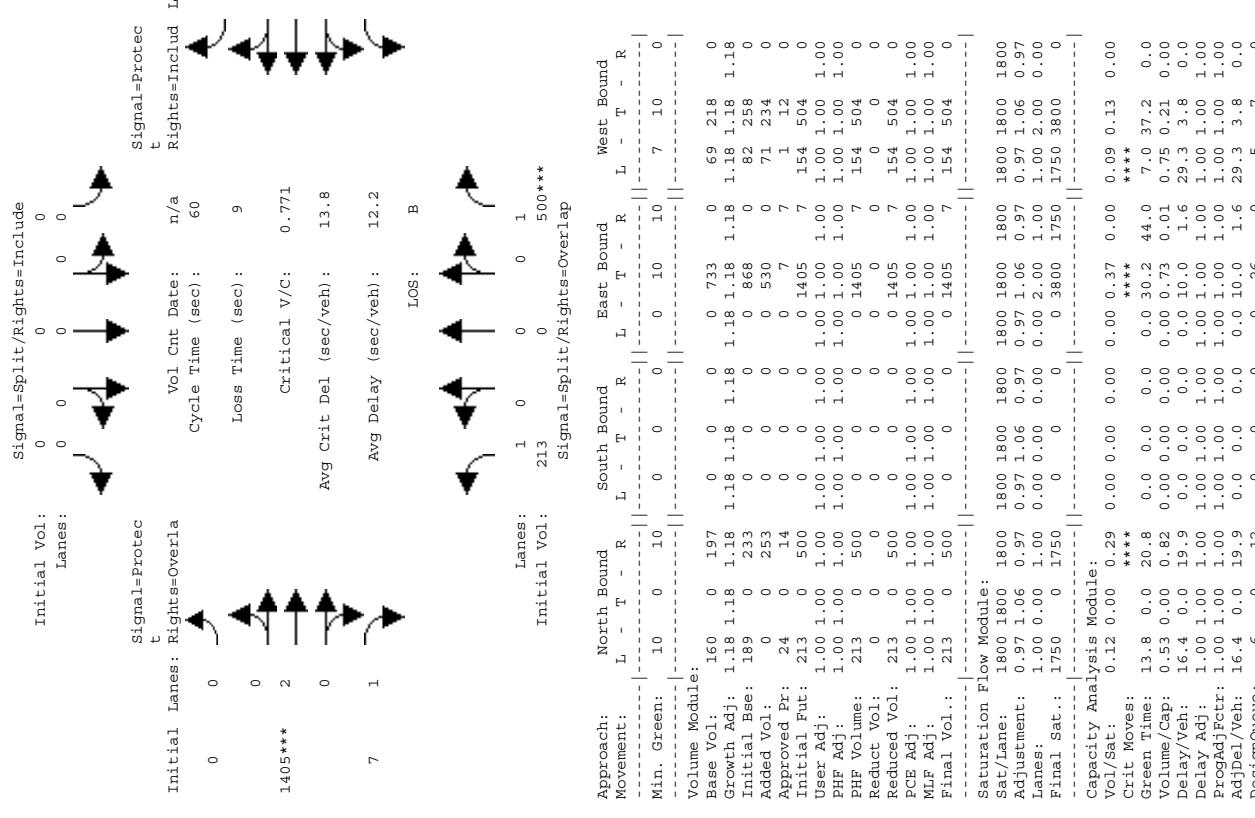
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
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Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 5

Intersection #6: Moffett/101 NB Ramps



Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	10 0 10 0	0 0 10 0	0 0 10 0	7 10 0
Volume Module:				
Base Vol:	160 0 197 0	0 0 733 0	69 218 0	0 0 733 0
Growth Adj:	1.18 1.18 1.18 1.18	1.18 1.18 1.18 1.18	1.18 1.18 1.18 1.18	1.18 1.18 1.18 1.18
Initial Bee:	233 0 233 0	0 0 868 0	82 258 0	0 0 868 0
Added Vol:	0 0 0 0	0 0 372 0	12 36 0	0 0 253 0
Approved Pr:	0 0 0 0	0 0 7 7	1 12 0	0 0 14 0
Initial Fut:	213 0 424 0	0 0 1247 7	95 306 0	0 0 500 7
User Adj:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
PHF Adj:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
PHF Volume:	213 0 424 0	0 0 1247 7	95 306 0	0 0 500 7
Reduced Vol:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
PCE Adj:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
MLF Adj:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
Final Vol.:	213 0 424 0	0 0 1247 7	95 306 0	0 0 500 7
Saturation Flow Module:				
Sat/Lane:	1800 1800 1800 1800	1800 1800 1800 1800	1800 1800 1800 1800	1800 1800 1800 1800
Adjustment:	0.97 1.06 0.97 1.06	0.97 1.06 0.97 1.06	0.97 1.06 0.97 1.06	0.97 1.06 0.97 1.06
Lanes:	1.00 0.00 1.00 0.00	0.00 0.00 2.00 1.00	1.00 2.00 0.00	1.00 2.00 0.00
Final Sat.:	1750 0 1750 0	0 0 3800 1750	3800 0	0 0 3800 1750
Capacity Analysis Module:				
Vol/Sat:	0.12 0.00 0.24 0.00	0.00 0.00 0.33 0.00	0.05 0.08 0.00	0.00 0.00 0.37 0.00
Crit Moves:	*****	*****	*****	*****
Green Time:	13.2 0.0 19.2 0.0	0.0 0.0 31.8 44.0	7.0 38.8 0.0	0.0 0.0 30.2 44.0
Volume/Cap:	0.60 0.00 0.76 0.00	0.00 0.00 0.62 0.01	0.47 0.12 0.00	0.00 0.00 0.73 0.01
Delay/Veh:	1.85 0.0 1.80 0.0	0.0 0.0 7.9 1.6	19.9 0.0 0.0	0.0 0.0 10.1 1.6
Delay Adj:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
ProgAdjFcrr:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
Addl/Ver:	18.0 0.0 18.0 0.0	0.0 0.0 7.9 2.1	1.6 3.1 0.0	0.0 0.0 10.0 1.6
DesignQueue:	6 0 10 0	0 0 3 4	0 0 0 0	0 0 26 0



Intersection #6: Moffett/101 NB Ramps

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 5

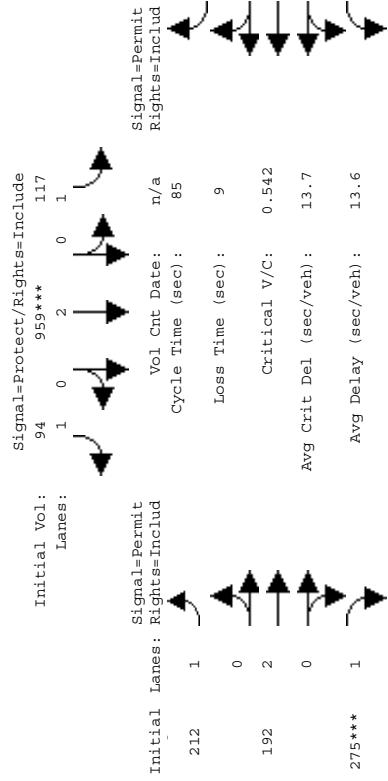
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 5

Intersection #6: Moffett/101 NB Ramps

Level Of Service Computation Report
HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1

Level Of Service Computation Report
 5 HCM Operations (Future Volume Alternative)
 AM 2013 Project Alt. 5

Intersection #8: Whisman/Middlefield



Signal Protect/Rights=Include

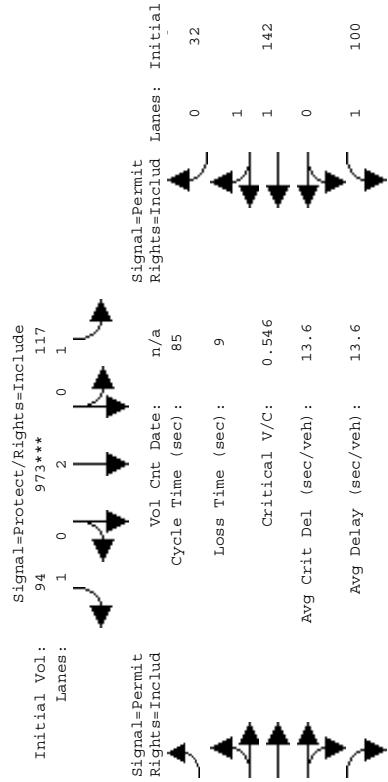
Lanes:	Initial Vol:	131****	673	235
B-:				
B+:				

Approach:	North Bound			South Bound			East Bound			West Bound		
	L - T	- R	L - T	- R	L - T	- R	L - T	- R	L - T	- R	L - T	- R
Movement:	-	-	-	-	-	-	-	-	-	-	-	-
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Volume Module:	-	-	-	-	-	-	-	-	-	-	-	-
Base Vol:	103	502	60	64	640	79	179	85	193	67	114	21
Growth Adj:	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18
Initial Base:	122	594	71	76	758	94	212	101	228	79	135	25
Added Vol:	0	27	0	27	0	0	0	0	0	0	0	0
Approved Pr:	9	52	164	41	199	0	0	91	47	21	7	7
Initial Put:	131	673	235	117	959	94	212	192	275	100	142	32
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	131	673	235	117	959	94	212	192	275	100	142	32
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	131	673	235	117	959	94	212	192	275	100	142	32
PoE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MFU Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	131	673	235	117	959	94	212	192	275	100	142	32
Saturation Flow Module:	-	-	-	-	-	-	-	-	-	-	-	-
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	1.06	0.97	1.06	0.97	1.06	0.97	1.03	1.00	1.00
Lanes:	1.00	2.00	1.00	2.00	1.00	2.00	1.00	2.00	1.00	1.62	0.38	0.38
Final Sat.:	1750	3800	1750	3800	1750	3800	1750	3800	1750	3019	680	680
Capacity Analysis Module:	-	-	-	-	-	-	-	-	-	-	-	-
Vol/Sat:	0.07	0.18	0.13	0.07	0.25	0.05	0.12	0.05	0.16	0.06	0.05	0.05
Crj. Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	11.7	44.3	44.3	7.0	39.6	39.6	24.7	24.7	24.7	24.7	24.7	24.7
Volume/Cap:	0.54	0.26	0.81	0.54	0.12	0.42	0.17	0.54	0.20	0.16	0.16	0.16
Delay/Veh:	27.8	9.0	8.6	48.1	12.6	9.7	18.9	17.2	20.2	17.3	17.1	17.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdj/Fctr:	1.00	0.85	0.85	1.00	0.85	0.85	1.00	0.85	1.00	1.00	0.85	0.85
AdjDel/Veh:	27.8	7.7	7.3	48.1	10.7	8.3	18.9	14.6	17.2	17.3	14.5	14.5

Level Of Service Computation Report
 5 HCM Operations (Future Volume Alternative)
 AM 2013 Project Alt. 5

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Intersection #8: Whisman/Middlefield



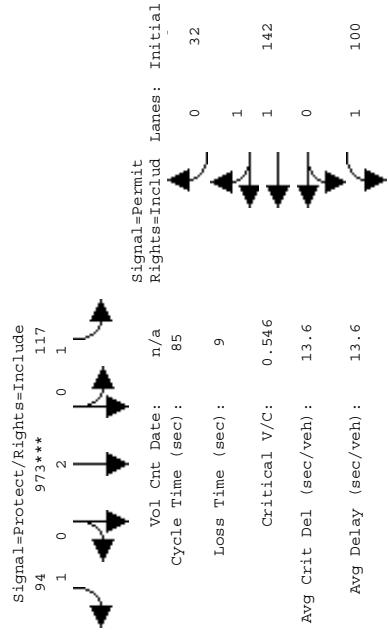
Initial Vol.: 131*** Lane: 1 0 2 0 1
LOS: B- Signal=Protect/Rights=Include

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Volume Module:	-	-	-	-	-	-	-	-	-	-	-	-
Base Vol.:	103	502	60	64	640	79	179	85	193	67	114	21
Growth Adj.:	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18
Initial Bse:	122	594	71	76	758	94	212	101	228	79	135	25
Added Vol.:	0	39	0	0	16	0	0	0	0	0	0	0
Approved Pr.:	9	52	164	41	199	0	0	91	47	21	7	7
Initial Put.:	131	685	235	117	973	94	212	192	275	100	142	32
User Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DHF Volume:	131	685	235	117	973	94	212	192	275	100	142	32
Reducut Vol.:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol.:	131	685	235	117	973	94	212	192	275	100	142	32
PCF Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MF Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	131	685	235	117	973	94	212	192	275	100	142	32
Saturation Flow Module:	-	-	-	-	-	-	-	-	-	-	-	-
Sat/Lane:	180	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.0	0.97	0.97	1.0	0.96	0.97	1.0	0.96	0.97	1.0	0.97
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	1.00	2.00	1.00	1.62	0.38
Final Sat.:	1750	3800	1750	1750	3800	1750	3800	1750	3800	1750	3019	680
Capacity Analysis Module:	-	-	-	-	-	-	-	-	-	-	-	-
Vol/Sat.:	0.07	0.18	0.13	0.07	0.26	0.05	0.12	0.05	0.16	0.06	0.05	0.05
Crit Moves:	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Green Time:	11.7	44.5	44.5	7.0	39.9	39.9	24.5	24.5	24.5	24.5	24.5	24.5
Volume/Cap:	0.55	0.34	0.26	0.81	0.55	0.11	0.42	0.18	0.55	0.20	0.16	0.16
Delay/Veh:	28.0	9.0	8.5	48.1	12.5	9.6	19.0	17.3	20.4	17.4	17.2	17.2
Delay Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdj/Fctr:	1.00	0.85	1.00	0.85	1.00	0.85	0.85	1.00	0.85	1.00	0.85	0.85
AdjDel/Veh:	28.0	7.6	7.2	48.1	10.6	8.2	19.0	14.7	17.3	17.4	14.6	14.6

**Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)**

三

Intense



LOS:

B-:

z	y	x	LOS	B-
1	0	2	0	1
1	0	0	685	131***
1	2	0	235	Signal=Protect/Rights=Include

h:	North Bound			South Bound			East Bound			West Bound		
	L - T	- R	L - T	- R	L - T	- R	L - T	- R	L - T	- R	L - T	- R
seen:	7	10	10	7	10	10	10	10	10	10	10	10
Module:	-	-	-	-	-	-	-	-	-	-	-	-
11:	103	502	60	64	640	79	179	85	193	67	114	21
Adj:	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18
Bee:	122	594	71	76	758	94	212	101	228	79	135	25
Box:	0	39	0	0	16	0	0	0	0	0	0	0
d Pr:	9	52	164	41	199	0	0	91	47	21	7	7
Fut:	131	685	23	117	973	94	212	192	275	100	142	32
j:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
l:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
lume:	131	685	235	117	973	94	212	192	275	100	142	32
Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Vol:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Vol:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Vol:	131	685	235	117	973	94	212	192	275	100	142	32
Ven:	0.07	0.18	0.13	0.07	0.26	0.05	0.12	0.05	0.16	0.06	0.05	0.05
Y Analysis Module:	-	-	-	-	-	-	-	-	-	-	-	-
Yaves:	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Time:	11.7	44.5	44.5	7.0	39.9	39.9	24.5	24.5	24.5	24.5	24.5	24.5
Time:	0.97	1.06	0.97	1.06	0.97	1.06	0.97	1.06	0.97	1.03	1.00	1.00
Time:	0.5	0.34	0.26	0.81	0.55	0.11	0.42	0.18	0.55	0.20	0.16	0.16
Time:	28.0	9.0	8.5	48.1	12.5	9.6	19.0	17.3	20.4	17.4	17.2	17.2
Time:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fctr:	1.00	0.85	0.85	1.00	0.85	1.00	1.00	0.85	1.00	0.85	1.00	0.85
Fctr:	1.00	0.85	0.85	1.00	0.85	1.00	1.00	0.85	1.00	0.85	1.00	0.85
Ven:	28.0	7.6	7.2	48.1	10.6	8.2	19.0	14.7	17.3	17.4	14.6	14.6

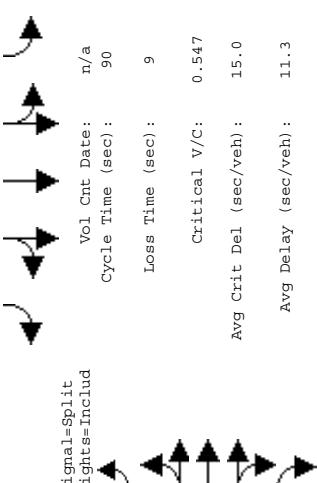
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM Peak

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1

Intersection #9: Ellis/Middlefield

Signal=Protect/Rights=Include

Initial Vol: 0 673 227***
Lanes: 0 0 2 0 1



Initial Vol: 0 0 709*** 394
Lanes: 0 10 7 10 0 0 0 0

Signal=Protect/Rights=Overlap

Approach: L - T - R South Bound L - T - R East Bound L - T - R West Bound

Min. Green: 0 0 0 0 0 0 0 0

Volume Module:

Base Vol: 0 709 394 227 673 0 0 0 0 204 0 134

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bee: 0 709 394 227 673 0 0 0 0 204 0 134

Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0

PassInitial Fut: 0 0 0 0 0 0 0 0 0 0 0 0

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 0 709 394 227 673 0 0 0 0 204 0 134

Reducit Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 0 709 394 227 673 0 0 0 0 204 0 134

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Final Vol.: 0 709 394 227 673 0 0 0 0 204 0 134

Saturation Flow Module:

Sat/Lane: 1800 1800 1800 1800 1800 1800 1800 1800 1800

Adjustment: 0.97 1.04 1.00 0.97 1.06 0.97 0.88 1.06 0.97

Lanes: 0.00 1.27 0.73 1.00 2.00 0.00 0.00 0.00 1.00

Final Sat.: 0 2377 1321 1750 3800 0 0 0 1750

Capacity Analysis Module:

Vol/Sat: 0.00 0.30 0.30 0.13 0.18 0.00 0.00 0.00 0.06 0.00 0.08

Crit Moves: ****

Green Time: 0.0 49.0 59.7 21.3 70.4 0.0 0.0 0.0 10.6 0.0 32.6

Volume/Cap: 0.00 0.55 0.45 0.55 0.23 0.00 0.00 0.00 0.55 0.00 0.27

Delay/Veh:

0.0 10.3 5.6 24.1 2.0 0.0 0.0 0.0 29.7 0.0 15.4

Delay/Adj:

1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

ProgAdjFcrt:

1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

AddDel/Veh:

0.0 10.3 5.6 24.1 2.0 0.0 0.0 0.0 29.7 0.0 15.4

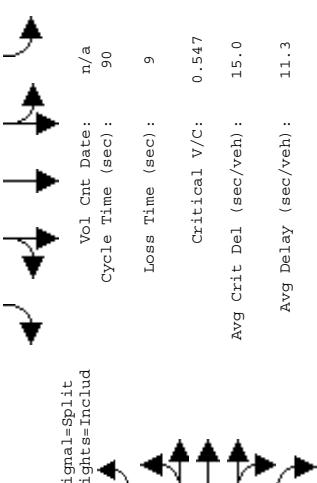
DesInqueue:

0 17 7 9 8 0 0 0 9 0 4

Intersection #9: Ellis/Middlefield

Signal=Protect/Rights=Include

Initial Vol: 0 0 98 350***
Lanes: 0 0 2 0 1



Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Includ

Approach: L - T Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.547

Avg Crit Del (sec/veh): 15.0

Avg Delay (sec/veh): 204***

LOS: B

Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Overlap

Approach: L - T - R Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.933

Avg Crit Del (sec/veh): 29.0

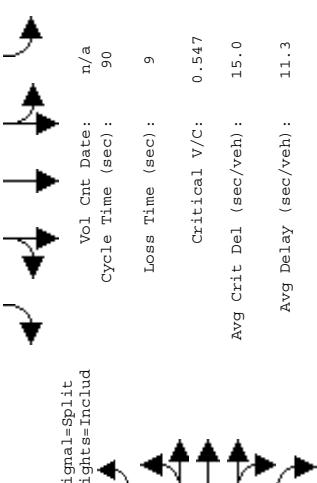
Avg Delay (sec/veh): 433***

LOS: C

Intersection #9: Ellis/Middlefield

Signal=Protect/Rights=Include

Initial Vol: 0 0 98 350***
Lanes: 0 0 2 0 1



Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Includ

Approach: L - T - R Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.547

Avg Crit Del (sec/veh): 15.0

Avg Delay (sec/veh): 21.6

LOS: C

Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Overlap

Approach: L - T - R - T - R Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.933

Avg Crit Del (sec/veh): 29.0

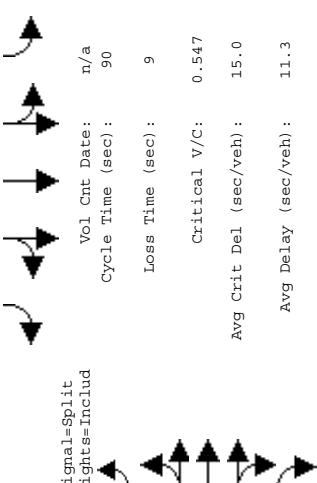
Avg Delay (sec/veh): 433***

LOS: C

Intersection #9: Ellis/Middlefield

Signal=Protect/Rights=Include

Initial Vol: 0 0 98 350***
Lanes: 0 0 2 0 1



Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Overlap

Approach: L - T - R - T - R Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.933

Avg Crit Del (sec/veh): 29.0

Avg Delay (sec/veh): 433***

LOS: C

Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Includ

Approach: L - T - R - T - R Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.933

Avg Crit Del (sec/veh): 29.0

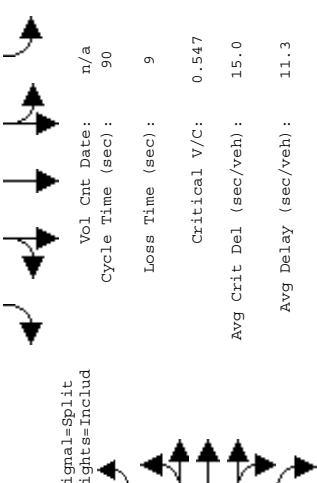
Avg Delay (sec/veh): 433***

LOS: C

Intersection #9: Ellis/Middlefield

Signal=Protect/Rights=Include

Initial Vol: 0 0 98 350***
Lanes: 0 0 2 0 1



Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Overlap

Approach: L - T - R - T - R Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.933

Avg Crit Del (sec/veh): 29.0

Avg Delay (sec/veh): 433***

LOS: C

Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Includ

Approach: L - T - R - T - R Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.933

Avg Crit Del (sec/veh): 29.0

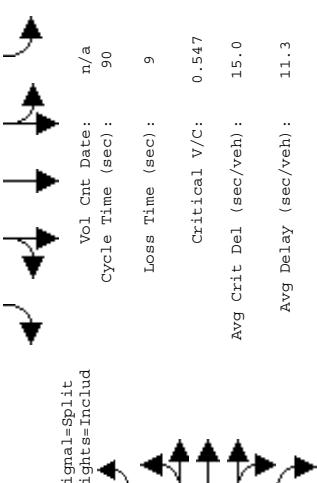
Avg Delay (sec/veh): 433***

LOS: C

Intersection #9: Ellis/Middlefield

Signal=Protect/Rights=Include

Initial Vol: 0 0 98 350***
Lanes: 0 0 2 0 1



Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Overlap

Approach: L - T - R - T - R Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.933

Avg Crit Del (sec/veh): 29.0

Avg Delay (sec/veh): 433***

LOS: C

Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Includ

Approach: L - T - R - T - R Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.933

Avg Crit Del (sec/veh): 29.0

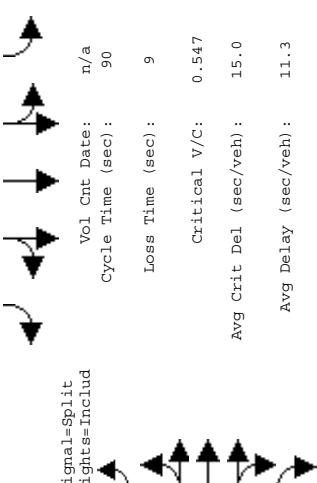
Avg Delay (sec/veh): 433***

LOS: C

Intersection #9: Ellis/Middlefield

Signal=Protect/Rights=Include

Initial Vol: 0 0 98 350***
Lanes: 0 0 2 0 1



Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Overlap

Approach: L - T - R - T - R Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.933

Avg Crit Del (sec/veh): 29.0

Avg Delay (sec/veh): 433***

LOS: C

Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Includ

Approach: L - T - R - T - R Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.933

Avg Crit Del (sec/veh): 29.0

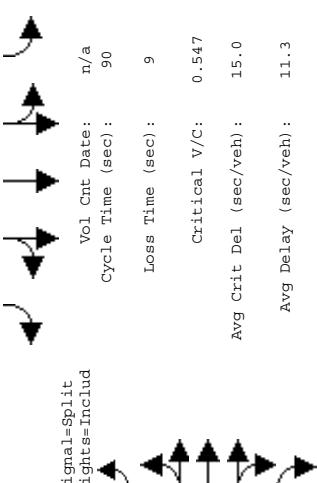
Avg Delay (sec/veh): 433***

LOS: C

Intersection #9: Ellis/Middlefield

Signal=Protect/Rights=Include

Initial Vol: 0 0 98 350***
Lanes: 0 0 2 0 1



Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Overlap

Approach: L - T - R - T - R Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.933

Avg Crit Del (sec/veh): 29.0

Avg Delay (sec/veh): 433***

LOS: C

Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Includ

Approach: L - T - R - T - R Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.933

Avg Crit Del (sec/veh): 29.0

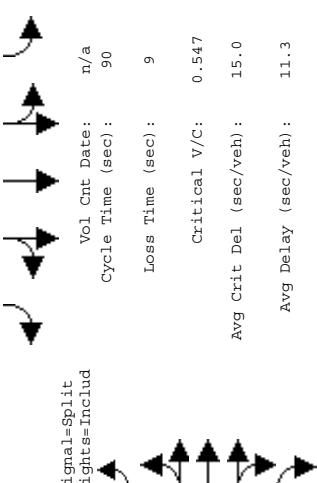
Avg Delay (sec/veh): 433***

LOS: C

Intersection #9: Ellis/Middlefield

Signal=Protect/Rights=Include

Initial Vol: 0 0 98 350***
Lanes: 0 0 2 0 1



Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Overlap

Approach: L - T - R - T - R Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.933

Avg Crit Del (sec/veh): 29.0

Avg Delay (sec/veh): 433***

LOS: C

Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Includ

Approach: L - T - R - T - R Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

Critical V/C: 0.933

Avg Crit Del (sec/veh): 29.0

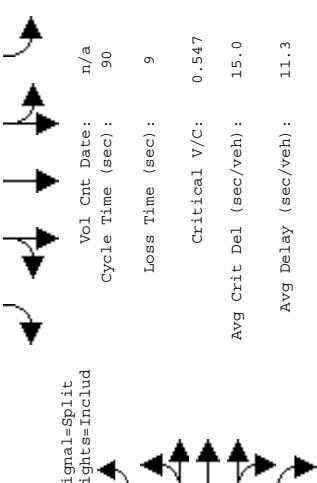
Avg Delay (sec/veh): 433***

LOS: C

Intersection #9: Ellis/Middlefield

Signal=Protect/Rights=Include

Initial Vol: 0 0 98 350***
Lanes: 0 0 2 0 1



Initial Vol: 0 0 0 0 98 350***
Lanes: 0 0 0 0 2 0

Signal=Split Rights=Overlap

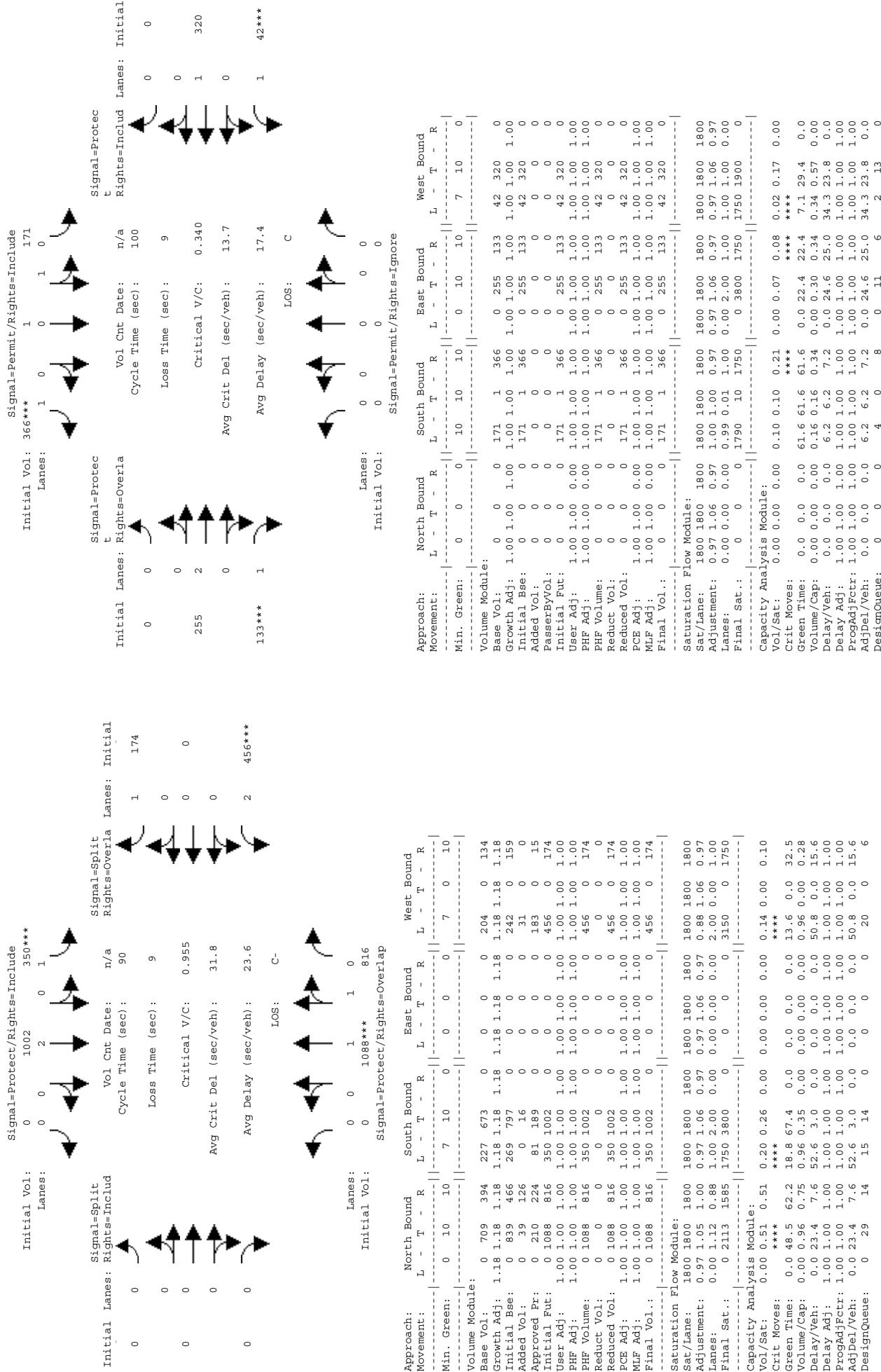
Approach: L - T - R - T - R Date: n/a Cycle Time (sec): 90

Loss Time (sec): 9

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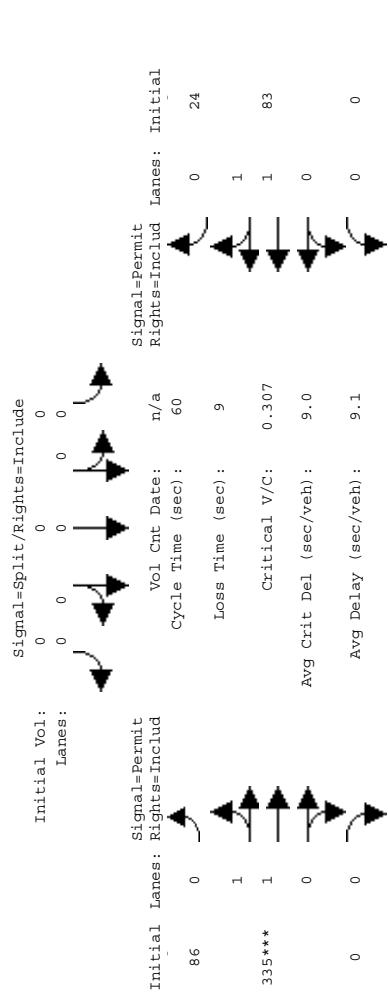
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 5

Level Of Service Computation Report
 35 HCM Operations (Future Volume Alternative)
 AM Peak



Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM Peak

Intersection #11: Ellis/101 NB Ramps
Intersection #11: Ellis/101 NB Ramps
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1



Initial Vol: 265*** Lanes: 1
Signal=Split/Rights=Include
Vol Cnt Date: 9 Critical V/C: 1.17
Loss Time (sec): 0
Avg Delay (sec/veh): 0
LOS: B

Initial Vol: 762*** Signal=Split/Rights=Include
Lanes: 1
Loss Time (sec): 11
Avg Delay (sec/veh): 11.180

Saturation Flow Module:

Vol/Sat:	0.15	0.01	0.01	0.00	0.00	0.11	0.11	0.00	0.00	0.03	0.03
Crit Moves:	*****										
Green Time:	28.8	28.8	0.0	0.0	22.2	22.2	0.0	0.0	0.0	0.0	0.0
Volume/Cap:	0.31	0.03	0.00	0.00	0.31	0.31	0.00	0.00	0.00	0.00	0.00
Delay/Veh:	7.3	6.3	6.3	0.0	0.0	10.2	10.2	0.0	0.0	9.3	9.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AddDel/Veh:	7.3	6.3	6.3	0.0	0.0	10.2	10.2	0.0	0.0	9.3	9.3
Desgnqueue:	5	0	0	0	0	2	7	0	0	2	1

Volume Module:

Base Vol:	265	9	17	0	0	86	335	0	83	24	24
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.18	1.18
Initial Bee:	265	9	17	0	0	86	335	0	83	24	28
Added Vol:	0	0	0	0	0	0	0	0	0	0	0
Approved Pr:	448	0	0	0	0	0	0	0	0	12	20
Initial Fct:	762	11	180	0	0	0	0	0	154	722	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	762	11	180	0	0	0	0	0	154	722	0
Reducit Vol:	0	0	0	0	0	0	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	265	9	17	0	0	86	335	0	83	24	48

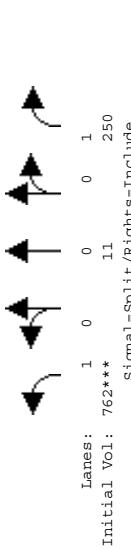
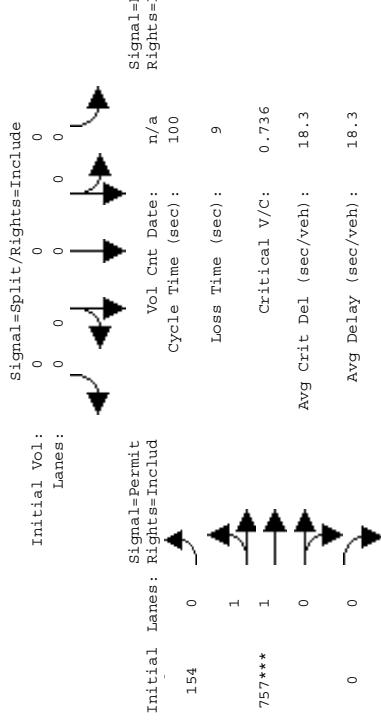
Capacity Analysis Module:

Vol/Sat:	0.42	0.11	0.11	0.00	0.00	0.24	0.24	0.00	0.00	0.05	0.05
Crit Moves:	*****										
Green Time:	58.4	58.4	58.4	0.0	0.0	0.0	0.0	0.0	0.0	32.6	32.6
Volume/Cap:	0.73	0.18	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.15
Delay/Veh:	12.9	7.4	7.4	0.0	0.0	0.0	0.0	0.0	0.0	18.1	18.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AddDel/Veh:	12.9	7.4	7.4	0.0	0.0	0.0	0.0	0.0	0.0	24.1	24.1
Desgnqueue:	20	0	0	0	0	4	4	0	0	18.1	18.1

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 5

Level Of Service Computation Report
1997 HCM 4-Way Stop (Future Volume Alternative)
AM Peak

Intersection #11: Ellis/101 NB Ramps



Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	10 10 0 0	0 10 10 0	0 10 10 0	0 10 10 0
Volume Module:				
Base Vol:	265	9	17	0
Growth Adj:	1.18	1.18	1.18	1.18
Initial Bee:	314	11	20	0
Added Vol:	0	244	0	0
Approved Pr:	448	0	-14	0
Initial Fut:	762	11	250	0
User Adj:	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00
PHF Volume:	762	11	250	0
Reducit Vol:	0	0	0	0
Reduced Vol:	762	11	250	0
PCE Adj:	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00
Final Vol.:	762	11	250	0
Saturation Flow Module:				
Vol/Lane:	1800	1800	1800	1800
Adjustment:	1.00	1.00	0.97	1.06
Lanes:	1.00	0.04	0.96	0.00
Final Sat.:	1800	76	1724	0
Capacity Analysis Module:				
Vol/Sat:	0.42	0.15	0.15	0.00
Crit Moves:	*****	*****	0.25	0.00
Green Time:	57.5	57.5	0.0	33.5
Volume/Cap:	0.74	0.25	0.00	0.00
Delay/Veh:	13.3	8.0	0.0	23.9
ProgAdjFctr:	1.00	1.00	1.00	1.00
Addl/Veh:	13.3	8.0	0.0	0.0
DesgnQueue:	20	0	6	30

Intersection #12: Ellis/Manila

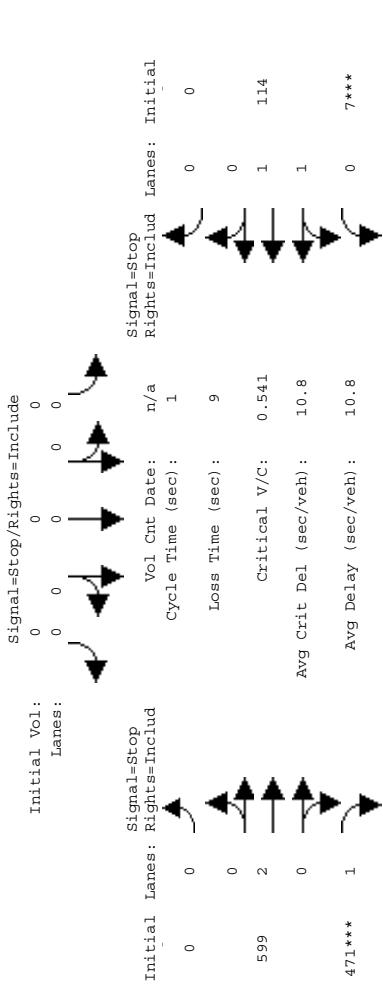


Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	7 10 10 0	7 10 10 0	7 10 10 0	7 10 10 0
Volume Module:				
Base Vol:	19	0	5	0
Growth Adj:	1.00	1.00	1.00	1.00
Initial Bee:	19	0	5	0
Added Vol:	0	0	0	0
PasserByVol:	0	0	0	0
Initial Fut:	19	0	5	0
User Adj:	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00
PHF Volume:	19	0	5	0
Reducit Vol:	0	0	0	0
Reduced Vol:	19	0	5	0
PCE Adj:	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00
Final Vol.:	19	0	5	0
Saturation Flow Module:				
Adjusment:	1.00	1.00	1.00	1.00
Lanes:	0.79	0.00	0.21	0.00
Final Sat.:	535	0	141	0
Capacity Analysis Module:				
Vol/Sat:	0.04	xxxx	0.04	xxxx
Crit Moves:	*****	*****	0.19	0.19
Delay/Veh:	8.2	0.0	8.2	0.0
Addl/Adj:	1.00	1.00	1.00	1.00
Del/Veh:	8.2	0.0	8.2	0.0
Los by Move:	A	*	A	*
ApproachAdj:	8.2	xxxxxx	8.1	xxxxxx
Delay Adj:	1.00	1.00	1.00	1.00
ApprAdjDel:	1.00	1.00	1.00	1.00
Los by Appr:	A	8.1	8.1	A

Level Of Service Computation Report
1997 HCM 4-Way Stop (Future Volume Alternative)
AM 2013 Project Alt. 1

Level of Service Computation Report
1997 HCM 4-Way Stop (Future Volume Alternative)
AM 2013 Project Alt. 5

Intersection #12: Ellis/Manila



Initial Vol: 5471***
Lanes: 0
Signal=Stop Rights=Include
Vol Cnt Date: n/a
Cycle Time (sec): 10.8
Loss Time (sec): 9
Critical V/C: 0.541
Avg Crit Del (sec/veh): 10.8
Avg Delay (sec/veh): 10.8
LOS: B

Initial Vol: 54***
Lanes: 0
Signal=Stop/Rights=Include
Vol Cnt Date: n/a
Cycle Time (sec): 10.8
Loss Time (sec): 9
Critical V/C: 0.541
Avg Crit Del (sec/veh): 10.8
Avg Delay (sec/veh): 10.8
LOS: B

Initial Vol: 0
Lanes: 0
Signal=Stop Rights=Include
Vol Cnt Date: n/a
Cycle Time (sec): 10.8
Loss Time (sec): 9
Critical V/C: 0.541
Avg Crit Del (sec/veh): 10.8
Avg Delay (sec/veh): 10.8
LOS: B

Initial Vol: 0
Lanes: 0
Signal=Stop Rights=Include
Vol Cnt Date: n/a
Cycle Time (sec): 10.8
Loss Time (sec): 9
Critical V/C: 0.541
Avg Crit Del (sec/veh): 10.8
Avg Delay (sec/veh): 10.8
LOS: B

Approach: North Bound
Movement: L - T - R
Min. Green: 7
Volume Module:
Base Vol: 19
Growth Adj: 1.18
Initial Bee: 22
Added Vol: 0
Approved Pr: 32
Initial Fut: 54
User Adj: 1.00
PHF Adj: 1.00
PHF Volume: 54
Reduc Vol: 0
Reduced Vol: 54
PCE Adj: 1.00
MLF Adj: 1.00
Final Vol.: 54
Saturation Flow Module:
Adjustment: 1.00
Lanes: 0.74
Final Sat.: 452
Capacity Analysis Module:
Crit Moves: *****
Delay/Veh: 9.3
Adel/Veh: 1.00
Los by Move: A
ApproachDel:
Delay Adj: 1.00
ApprAdjDel:
Los by Appr:

Intersection #12: Ellis/Manila
Initial Vol: 54***
Lanes: 0
Signal=Stop Rights=Include
Vol Cnt Date: n/a
Cycle Time (sec): 10.8
Loss Time (sec): 9
Critical V/C: 0.541
Avg Crit Del (sec/veh): 11.7
Avg Delay (sec/veh): 11.7
LOS: B

Approach: North Bound
Movement: L - T - R
Min. Green: 7
Volume Module:
Base Vol: 19
Growth Adj: 1.18
Initial Bee: 22
Added Vol: 0
Approved Pr: 32
Initial Fut: 54
User Adj: 1.00
PHF Adj: 1.00
PHF Volume: 54
Reduc Vol: 0
Reduced Vol: 54
PCE Adj: 1.00
MLF Adj: 1.00
Final Vol.: 54
Saturation Flow Module:
Adjustment: 1.00
Lanes: 0.68
Final Sat.: 407
Capacity Analysis Module:
Crit Moves: *****
Delay/Veh: 9.6
Adel/Veh: 1.00
Los by Move: A
ApproachDel:
Delay Adj: 1.00
ApprAdjDel:
Los by Appr:

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1

Level Of Service Computation Report
 35 HCM Operations (Future Volume Alternative)
 AM 2013 Project Alt. 5

Signal Configuration	Vol Cnt Date	Cycle Time (sec)	Loss Time (sec)	Critical V/C	Avg Crit Del (sec/veh)	Avg Delay (sec/veh)
Signal=Protect/Rights=Includ	n/a	85	-	-	-	-
Signal=Split Rights=Includ	-	-	9	0.689	21.1	19.3

Lanes:	0	0	4	0	1
Initial Vol.:	0	1104	294***		
Signal=Protect/Rights=Include					
approach:	North Bound	South Bound	East Bound	West Bound	
L - T - R	L - T - R	L - T - R	L - T - R		
Min. Green:	0 10 10	7 10 0	7 10 10	0 0 0	
Volume Module:					
Base Vol.:	0 746 176	417 428 0	300 352 233	0 0 0	
Growth Adj.:	1.18 1.18 1.18	1.18 1.18 1.18	1.18 1.18 1.18	1.18 1.18 1.18	
Initial Base:	0 883 208	494 507 0	355 417 276	0 0 0	
Added Vol.:	0 64 0	0 6 0	55 0 0	0 0 0	
Approved Pr.:	0 157 86	203 58 0	300 146 0	0 0 0	
Initial Fit:	0 1104 294	697 571 0	710 563 276	0 0 0	
User Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
HIF Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
HIF Volume:	0 1104 294	697 571 0	710 563 276	0 0 0	
Predict Vol.:	0 0 0	0 0 0	0 0 0	0 0 0	
Reduced Vol.:	0 1104 294	697 571 0	710 563 276	0 0 0	
PF Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
MLF Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
Final Vol.:	0 1104 294	697 571 0	710 563 276	0 0 0	
Saturation Flow Module:					
sat/Lane:	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800	
Volume/Cap:	0.97 1.06 0.97	0.88 1.06 0.97	0.88 1.04 1.00	0.97 1.06 0.97	
lanes:	0.00 4.00 1.00	2.00 2.00 0.00	2.00 1.32 0.68	0.00 0.00 0.00	
Final Sat.:	0 7600 1750	3150 3800 0	3150 2482 1217	0 0 0	
Capacity Analysis Module:					
Vol/Sat:	0.00 0.15 0.17	0.22 0.15 0.00	0.23 0.23 0.23	0.00 0.00 0.00	
crit Moves:	****	****	****	****	
Green Time:	0.0 20.7	27.3 48.0	0.0 28.0 28.0	0.0 0.0 0.0	
Volume/Cap:	0.00 0.60 0.69	0.69 0.27 0.00	0.68 0.69 0.69	0.00 0.00 0.00	
Delay/Teh:	0.0 22.0	25.4 7.2	0.0 20.1 20.0	0.0 0.0 0.0	
Delay Adj.:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
Progradj/Fctr:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
AdjDel/Veh:	0.0 22.0	25.4 7.2	0.0 20.1 20.0	0.0 0.0 0.0	
EstimTime:	0 41 11	23 12 0	24 19 0	0 0 0	

Level Of Service Computation Report
 35 HCM Operations (Future Volume Alternative)
 AM 2013 Project Alt. 5

Level Of Service Computation Report
 35 HCM Operations (Future Volume Alternative)
 AM 2013 Project Alt. 5

Initial Vol:		Lanes:		Signal=Split Rights=Include		Signal=Split Rights=Include	
730***	2	0	0	595	0	595	0
563	1	0	2	0	2	0	0
276	0	1	1	0	2	0	0

Lanes:		Vol Cnt Date:		Loss Time (sec):		Critical V/C:	
Initial Vol:	0	0	n/a	85	9	0.695	0
Avg Crit Del (sec/veh):	21.3						0
Avg Delay (sec/veh):	19.3						0
LOS:	C						0

Lanes:		Vol Cnt Date:		Loss Time (sec):		Critical V/C:	
Initial Vol:	0	0	11:30	0	1	294***	0
Avg Crit Del (sec/veh):	21.3						0
Avg Delay (sec/veh):	19.3						0
LOS:	C						0

Approach:		North Bound		South Bound		East Bound		West Bound	
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	
Min. Green:	0	10	10	7	10	0	7	10	0

Volume Module:								
Base Vol:	0 746 176	417 428	0	300	352	233	0	0
Growth Adj:	1.18 1.18	1.18 1.18	1.18 1.18	1.18 1.18	1.18 1.18	1.18 1.18	1.18 1.18	1.18 1.18
Initial Bse:	0 883 208	494 507	0	356	417	276	0	0
Added Vol:	0 90 0	0 30	0	75	0	0	0	0
Approved Frt:	0 157 294	697 595	0	300	146	0	0	0
Approved Frt:	0 1130 294	697 595	0	730	563	276	0	0
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHP Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHP Volume:	0 1130 294	697 595	0	730	563	276	0	0
Reducut Vol:	0 0 0	0 0 0	0	0	0	0	0	0
Reduced Vol:	0 1130 294	697 595	0	730	563	276	0	0
PCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
MLF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Vol.:	0 1130 294	697 595	0	730	563	276	0	0

Saturation Flow Module:								
Sat/Lane:	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800	
Adjustment:	0.97 1.06 0.97	0.88 1.06 0.97	0.88 1.04 1.00	0.88 1.04 1.00	0.88 1.04 1.00	0.97 1.06 0.97	1.06 0.97 1.06	
Lanes:	0.00 4.00 1.00	0.00 2.00 0.00	0.00 2.00 0.00	0.00 2.00 0.00	0.00 2.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	
Final Sat.:	0 7600 1750	3150 3800	0	3150	2482	1217	0	0

Capacity Analysis Module:								
Vol/Sat:	0.00 0.15 0.17	0.22 0.16 0.00	0.23 0.23 0.23	0.23 0.23 0.23	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	
Crit Moves:	*****	*****	*****	*****	*****	*****	*****	
Green Time:	0.0 20.6	27.1 47.6	0.0	28.4	28.4	0.0	0.0	0.0
Volume/Cap:	0.00 0.61	0.69 0.28	0.00	0.69	0.68	0.00	0.00	0.00
Delay/Veh:	0.00 22.3	25.7 7.4	0.0	20.1	19.6	19.6	0.0	0.0
Delay Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
ProgAdjFcrr:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
AddEl/Veh:	0.0 22.3	20.7 7.4	0.0	20.1	19.6	19.6	0.0	0.0
DesimOnev:	0 42.1	24.13	0	24.19	q	q	0	0

**Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM Peak**

Level Of Service Computation Report
HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 1

Initial Vol:
Lanes: 24 0 0 1 19***

Initial Lanes: Rights=Includ
Signal=Protect

Initial Vol Cnt Date:
Cycle Time (sec): n/a 60

Loss Time (sec): 9

Critical V/C: 0.286

Avg Crit Del. (sec/veh): 8.0

Avg Delay (sec/veh): 7.7

Initial Lanes: Rights=Ignore
Signal=Protect

Initial Vol Cnt Date:
Cycle Time (sec): n/a 60

Loss Time (sec): 9

Critical V/C: 0.286

Avg Crit Del. (sec/veh): 8.0

Avg Delay (sec/veh): 7.7

Initial Vol:
Lanes: 1 0 0 1 164

Initial Lanes: Rights=Ignore
Signal=Protect

Initial Vol Cnt Date:
Cycle Time (sec): n/a 60

Loss Time (sec): 9

Critical V/C: 0.286

Avg Crit Del. (sec/veh): 8.0

Avg Delay (sec/veh): 7.7

Initial Vol:
Lanes: 381*** 1 0 1 27***

Initial Lanes: Rights=Includ
Signal=Protect

Initial Vol Cnt Date:
Cycle Time (sec): n/a 60

Loss Time (sec): 9

Critical V/C: 0.286

Avg Crit Del. (sec/veh): 8.0

Avg Delay (sec/veh): 7.7

Initial Vol:
Lanes: 64 1 0 0 0 0 0

Initial Lanes: Rights=Ignore
Signal=Protect

Initial Vol Cnt Date:
Cycle Time (sec): n/a 60

Loss Time (sec): 9

Critical V/C: 0.286

Avg Crit Del. (sec/veh): 8.0

Avg Delay (sec/veh): 7.7

	Lanes:	0	0	0	0	0	0	
Initial Vol.:	0	0	0	0	0	0		
Signal=Split/Rights=Include								
Approach:	North Bound	South Bound	East Bound	West Bound				
Movement:	$L - T - R$							
Min. Green:	0	0	10	0	10	7	10	
Volume Module:								
Base Vol.	0	0	19	0	24	381	64	
Growth Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Initial Bse:	0	0	19	0	24	381	64	
Added Vol.:	0	0	0	0	0	0	0	
PasserByVol.:	0	0	0	0	0	0	0	
Initial Put:	0	0	19	0	24	381	64	
User Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHF Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHF Reduct Vol.:	0	0	19	0	24	381	64	
Reduced Vol.:	0	0	0	0	0	0	0	
Reduced Vol.:	0	0	19	0	24	381	64	
PCB Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
MLF Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Final Vol.:	0	0	19	0	24	381	64	
Saturation Flow Module:								
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	
Adjustment:	0.97	1.06	0.97	1.06	0.97	1.06	0.97	
Lanes:	0.00	0.00	0.00	1.00	1.00	1.00	0.00	
Final Sat.:	0	0	0	1750	0	1750	1900	

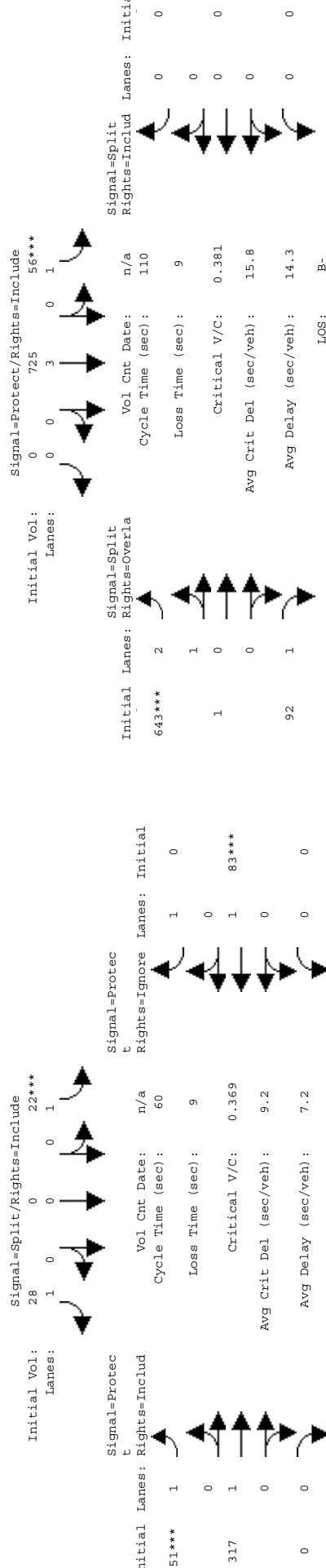
Level Of Service Computation Report
HCM Operations (Future Volume Alternative)
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Figure 1 consists of four traffic signal timing diagrams arranged in a 2x2 grid. The left column represents the 'Signal=Split/Rights=Include' scenario, and the right column represents the 'Signal=Protect' scenario. The top row shows a 28-second cycle, while the bottom row shows a 60-second cycle.

- Top Row (28-second cycle):**
 - Left Column (Signal=Split/Rights=Include):** Initial Vol: 28, Lanes: 1. The diagram shows a sequence of green, yellow, and red phases for two lanes. Lane 1 has a green phase from 0-10s, yellow from 10-12s, and red from 12-28s. Lane 2 has a green phase from 10-12s, yellow from 12-14s, and red from 14-28s. Lane 1 is protected during its green phase.
 - Right Column (Signal=Protect):** Initial Vol: 22***, Lanes: 1. The diagram shows a sequence of green, yellow, and red phases for one lane. Lane 1 has a green phase from 0-10s, yellow from 10-12s, and red from 12-28s. Lane 1 is protected during its green phase.
- Bottom Row (60-second cycle):**
 - Left Column (Signal=Split/Rights=Include):** Initial Vol: 451***, Lanes: 1. The diagram shows a sequence of green, yellow, and red phases for one lane. Lane 1 has a green phase from 0-10s, yellow from 10-12s, and red from 12-60s. Lane 1 is protected during its green phase.
 - Right Column (Signal=Protect):** Initial Vol: 311, Lanes: 1. The diagram shows a sequence of green, yellow, and red phases for one lane. Lane 1 has a green phase from 0-10s, yellow from 10-12s, and red from 12-60s. Lane 1 is protected during its green phase.

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AM 2013 Project Alt. 5

**Level Of Service Computation Report
985 HCM Operations (Future Volume Alternative)
AM Peak**



Initial Vol: 0 0 0 0 0 0

Lanes: 0 0 0 0 0 0

Signal=Split/Right=Include

Approach: North Bound L - T - R L - T - R L - T - R

Movement: L - T - R L - T - R L - T - R

Min. Green: 0 0 0 10 0 10

Volume Module:

Base Vol:	0	19	0	19	0	24	381	64	0	0	27	0
Growth Adj:	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	0
Initial Bse:	0	0	22	0	28	451	76	0	32	0	0	0
Added Vol:	0	0	0	0	0	0	0	7	0	0	19	0
Approved Pr:	0	0	0	0	0	0	0	234	0	0	32	0
Initial Fut:	0	0	22	0	28	451	317	0	0	83	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	0	0	22	0	28	451	317	0	83	0	0	0
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol.:	0	0	22	0	28	451	317	0	83	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	22	0	28	451	317	0	83	0	0	0

Saturation Flow Module:

Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	1.06	0.97	1.06	0.97	1.06	0.97	1.06	0.97	1.06
Lanes:	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Final Sat.:	0	0	0	0	0	0	0	0	0	0	0	0

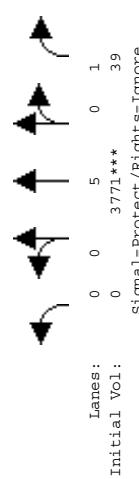
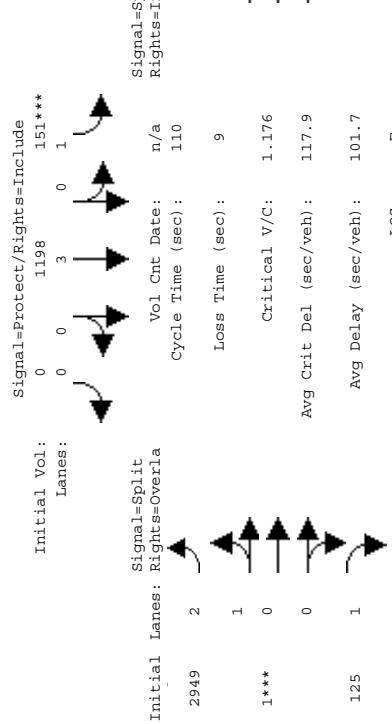
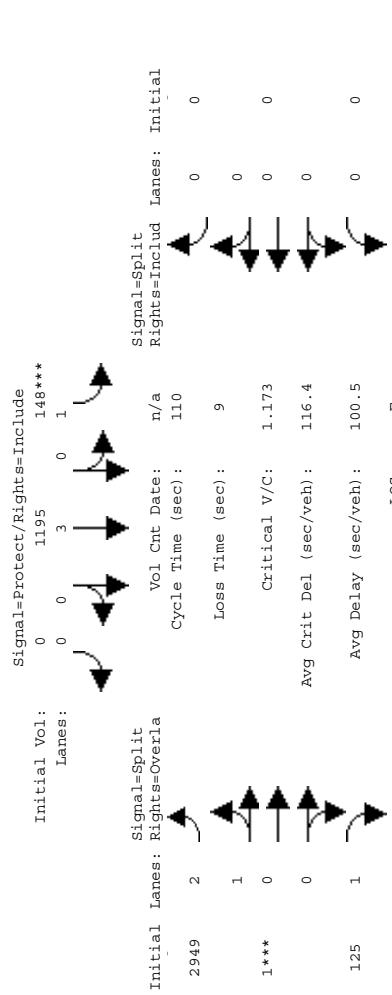
Capacity Analysis Module:

Vol/Sat:	0.00	0.19	0.00	0.03	0.13	0.00	0.13	0.13	0.05	0.00	0.00	0.00
Crit Moves:	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Green Time:	0.0	54.2	0.0	9.2	63.5	0.0	37.5	37.5	37.5	0.0	0.0	0.0
Volume/Cap:	0.00	0.38	0.00	0.38	0.00	0.22	0.15	0.15	0.15	0.00	0.00	0.00
Delay/Veh:	0.0	13.3	0.0	37.1	8.6	0.0	20.9	20.9	19.2	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AddDel/Veh:	0.0	13.3	0.0	37.1	8.6	0.0	20.9	20.9	19.2	0.0	0.0	0.0
DesignQueue:	0	58	0	3	19	0	27	0	4	0	0	0

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Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 5

Intersection #16: 237 EB Ramps/Mathilda



Approach:	North Bound	South Bound	East Bound	West Bound	Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	0 10 10	0 7 10	0 7 10	0 7 10	Min. Green:	0 10 10	0 7 10	0 7 10	0 7 10
Volume Module:					Volume Module:				
Base Vol:	0 1787	0 56 725	0 643 1	0 92 0	Base Vol:	0 1787	0 56 725	0 643 1	0 92 0
Growth Adj:	1.18 1.18	1.18 1.18	1.18 1.18	1.18 1.18	Growth Adj:	1.18 1.18	1.18 1.18	1.18 1.18	1.18 1.18
Initial Bee:	0 2116	0 66 888	0 761 1	0 109 0	Initial Bee:	0 2116	0 66 888	0 761 1	0 109 0
Added Vol:	0 8	0 0 1	0 0 0	0 0 0	Added Vol:	0 12	0 3 4	0 0 0	0 0 0
Approved Pr:	0 1647	39 82	336 0	16 0	Approved Pr:	0 1647	39 82	336 0	16 0
Initial Fut:	0 3771	39 148 1195	0 2949 1	125 0	Initial Fut:	0 3775	39 151 1198	0 2949 1	125 0
User Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	User Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	PHF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Volume:	0 3771	0 148 1195	0 2949 1	125 0	PHF Volume:	0 3775	0 151 1198	0 2949 1	125 0
Reducit Vol:	0 0	0 0 0	0 0 0	0 0 0	Reducit Vol:	0 0	0 0 0	0 0 0	0 0 0
PCE Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	PCE Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
MLF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	MLF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
Final Vol.:	0 3771	0 148 1195	0 2949 1	125 0	Final Vol.:	0 3775	0 151 1198	0 2949 1	125 0
Saturation Flow Module:					Saturation Flow Module:				
Sat/Lane:	1800 1800	1800 1800	1800 1800	1800 1800	Sat/Lane:	1800 1800	1800 1800	1800 1800	1800 1800
Adjustment:	0.971.06	0.97 1.06	0.97 1.06	0.97 1.06	Adjustment:	0.97 1.06	0.97 1.06	0.97 1.06	0.97 1.06
Lanes:	0 500	1.00 3.00	0.97 2.99	0.97 2.99	Lanes:	0 500	1.00 3.00	0.97 2.99	0.97 2.99
Final Sat.:	0 9500	1750 5700	0 4948	0 4948	Final Sat.:	0 9500	1750 5700	0 4948	0 4948
Capacity Analysis Module:					Capacity Analysis Module:				
Vol/Sat:	0.00 0.40	0.00 0.08	0.21 0.00	0.60 0.60	Vol/Sat:	0.00 0.40	0.00 0.09	0.21 0.00	0.60 0.60
Crit Moves:	****	****	****	****	Crit Moves:	****	****	****	****
Green Time:	0.0 37.2	0.0 7.9 45.1	0.0 55.9 55.9	0.0 55.9 0	Green Time:	0.0 37.2	0.0 8.45 2	0.0 55.8 55.8	0.0 0.0 0.0
Volume/Cap:	0.00 0.117	0.00 1.17 0.51	0.00 1.17 1.17	0.14 0.00 0.00	Volume/Cap:	0.00 0.118	0.00 1.18 0.51	0.00 1.18 1.18	0.00 0.00 0.00
Delay/Veh:	0.0 117	0 181.4 181.6	0 112.6 113	10.9 0 0	Delay/Veh:	0.0 118	0 182.1 183.5	0 0 114.1 114.1	0 0 0 0
Delay/Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	Delay/Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
ProgAdjFcrt:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	ProgAdjFcrt:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
AddDel/Veh:	0.0 117	0 0 181.4 181.6	0 0 112.6 113	10.9 0 0	AddDel/Veh:	0.0 118	0 0 182.1 183.5	0 0 114.1 114.1	0 0 0 0
DesInqueue:	0 170	0 9 46	0 103	0 4 0	DesInqueue:	0 171	0 9 46	0 103	0 0 0 0

Initial Vol:	Lanes:	Vol Cnt Date:	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):	LOS:
2949	2	n/a	110	0	1.173	116.4	100.5	F
1***	0			0				
0	0			0				
125	1			0				

Initial Vol:	Lanes:	Vol Cnt Date:	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):	LOS:
2949	2	n/a	110	0	1.173	116.4	100.5	F
1***	0			0				
0	0			0				
125	1			0				

Initial Vol:	Lanes:	Vol Cnt Date:	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):	LOS:
2949	2	n/a	110	0	1.173	116.4	100.5	F
1***	0			0				
0	0			0				
125	1			0				

Initial Vol:	Lanes:	Vol Cnt Date:	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):	LOS:
2949	2	n/a	110	0	1.173	116.4	100.5	F
1***	0			0				
0	0			0				
125	1			0				

Initial Vol:	Lanes:	Vol Cnt Date:	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):	LOS:
2949	2	n/a	110	0	1.173	116.4	100.5	F
1***	0			0				
0	0			0				
125	1			0				

Initial Vol:	Lanes:	Vol Cnt Date:	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):	LOS:
2949	2	n/a	110	0	1.173	116.4	100.5	F
1***	0			0				
0	0			0				
125	1			0				

Initial Vol:	Lanes:	Vol Cnt Date:	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):	LOS:
2949	2	n/a	110	0	1.173	116.4	100.5	F
1***	0			0				
0	0			0				
125	1			0				

Initial Vol:	Lanes:	Vol Cnt Date:	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):	LOS:
2949	2	n/a	110	0	1.173	116.4	100.5	F
1***	0			0				
0	0			0				
125	1			0				

Initial Vol:	Lanes:	Vol Cnt Date:	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):	LOS:
2949	2	n/a	110	0	1.173	116.4	100.5	F
1***	0			0				

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1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 5

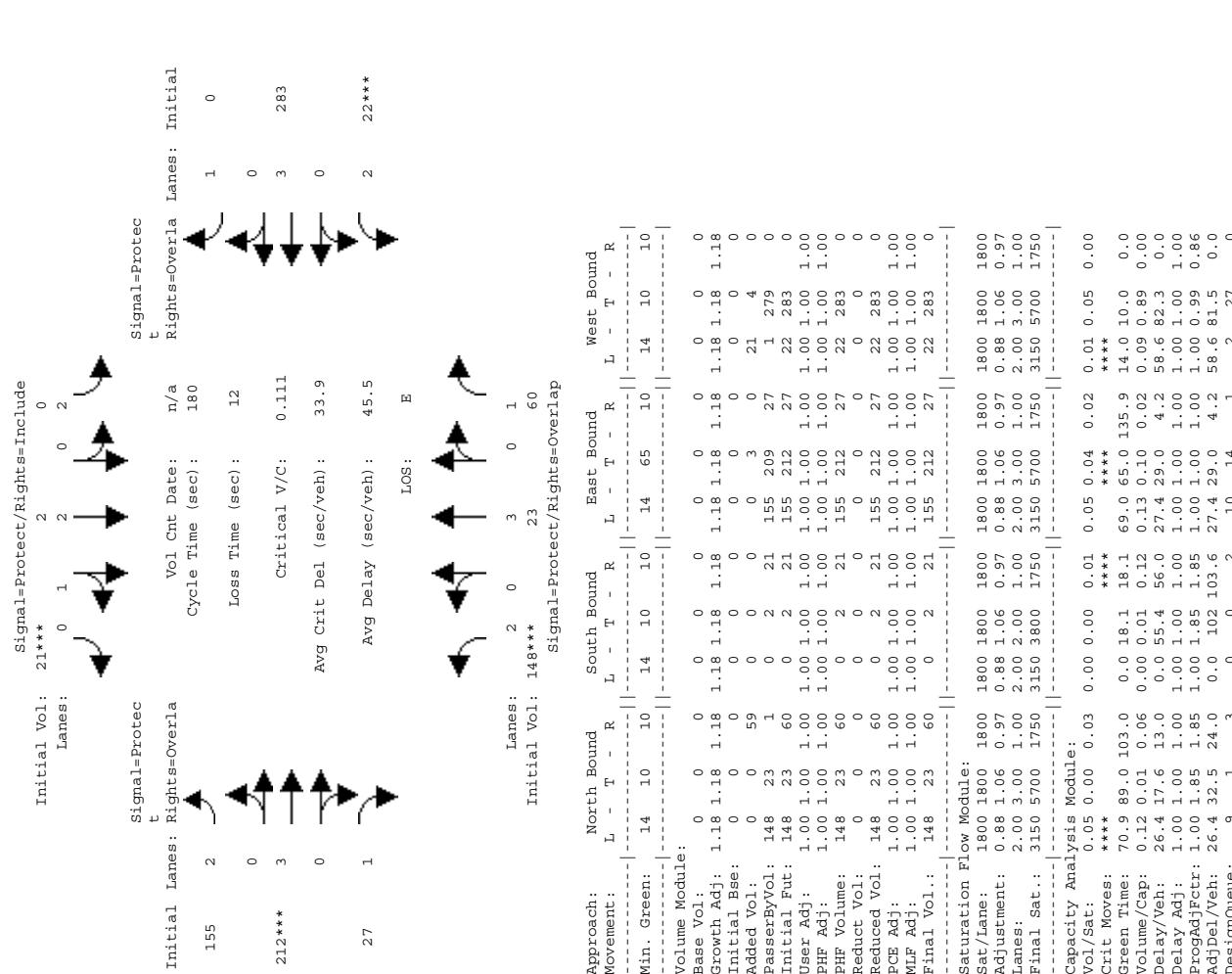
Intersection #18: Mathilda/Moffett Park

Intersection #18: Mathilda/Moffett Park

Approach: North Bound										Approach: South Bound										Approach: East Bound										Approach: West Bound																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Lanes:	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	10010	10011	10012	10013	10014	10015	10016	10017	10018	10019	10020	10021	10022	10023	10024	10025	10026	10027	10028	10029	10030	10031	10032	10033	10034	10035	10036	10037	10038	10039	10040	10041	10042	10043	10044	10045	10046	10047	10048	10049	10050	10051	10052	10053	10054	10055	10056	10057	10058	10059	10060	10061	10062	10063	10064	10065	10066	10067	10068	10069	10070	10071	10072	10073	10074	10075	10076	10077	10078	10079	10080	10081	10082	10083	10084	10085	10086	10087	10088	10089	10090	10091	10092	10093	10094	10095	10096	10097	10098	10099	100100	100101	100102	100103	100104	100105	100106	100107	100108	100109	100110	100111	100112	100113	100114	100115	100116	100117	100118	100119	100120	100121	100122	100123	100124	100125	100126	100127	100128	100129	100130	100131	100132	100133	100134	100135	100136	100137	100138	100139	100140	100141	100142	100143	100144	100145	100146	100147	100148	100149	100150	100151	100152	100153	100154	100155	100156	100157	100158	100159	100160	100161	100162	100163	100164	100165	100166	100167	100168	100169	100170	100171	100172	100173	100174	100175	100176	100177	100178	100179	100180	100181	100182	100183	100184	100185	100186	100187	100188	100189	100190	100191	100192	100193	100194	100195	100196	100197	100198	100199	100200	100201	100202	100203	100204	100205	100206	100207	100208	100209	100210	100211	100212	100213	100214	100215	100216	100217	100218	100219	100220	100221	100222	100223	100224	100225	100226	100227	100228	100229	100230	100231	100232	100233	100234	100235	100236	100237	100238	100239	100240	100241	100242	100243	100244	100245	100246	100247	100248	100249	100250	100251	100252	100253	100254	100255	100256	100257	100258	100259	100260	100261	100262	100263	100264	100265	100266	100267	100268	100269	100270	100271	100272	100273	100274	100275	100276	100277	100278	100279	100280	100281	100282	100283	100284	100285	100286	100287	100288	100289	100290	100291	100292	100293	100294	100295	100296	100297	10029

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
AM 2013 Project Alt. 5

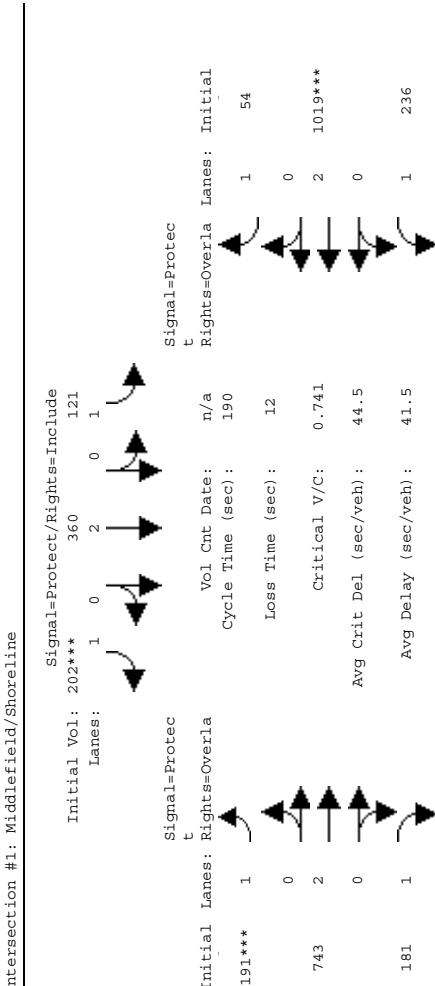
Intersection #19: Central/Mary



Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM Peak

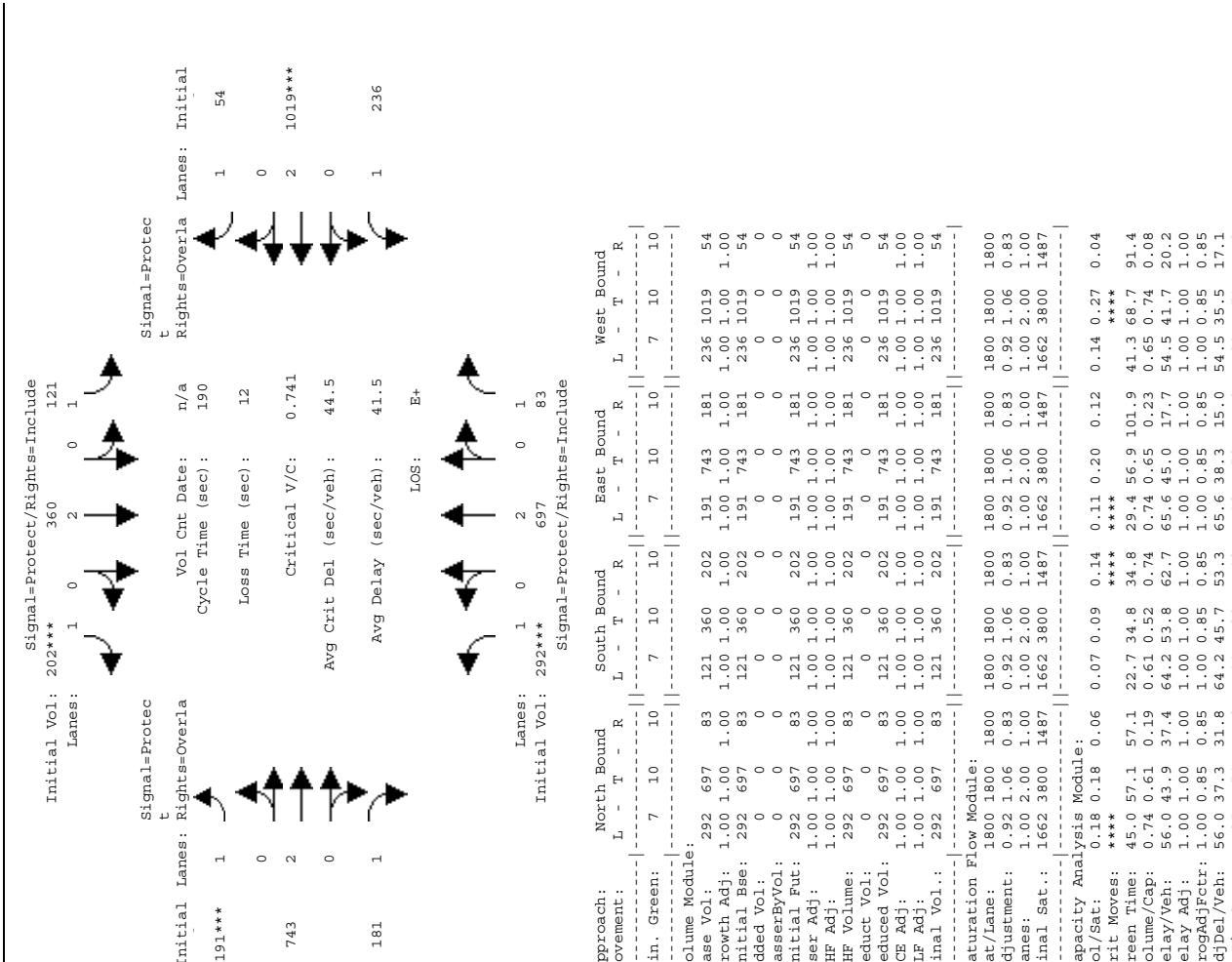
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

Intersection #1: Middlefield/Shoreline

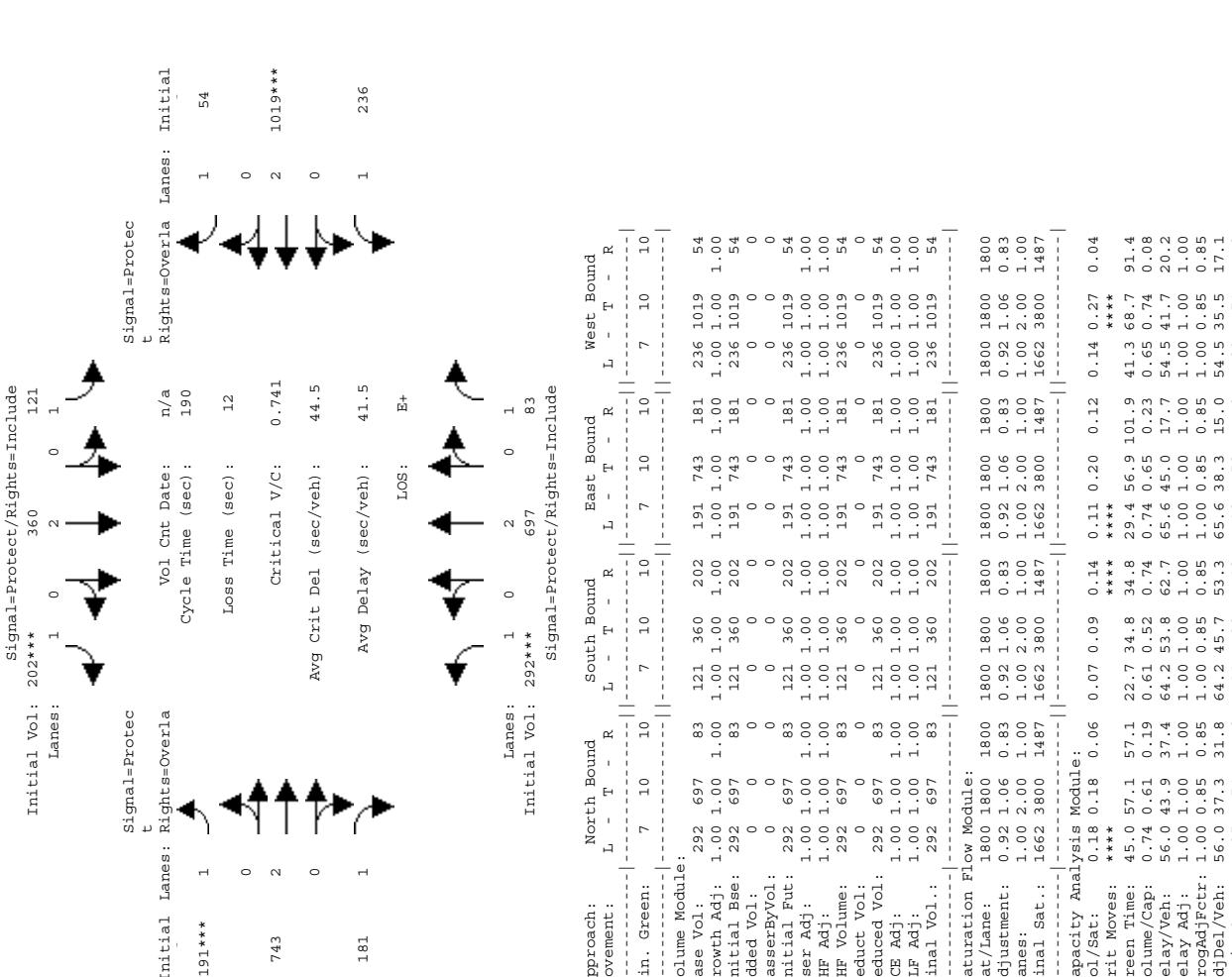


Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	7 10 10	7 10 10	7 10 10	7 10 10
Volume Module:				
Base Vol:	292 697	83	121 360	202 191 743
Growth Adj:	1.00 1.00	1.00	1.00 1.00	1.00 1.00 1.00
Initial Bee:	292 697	83	121 360	202 191 743 181 236 1019
Added Vol:	0 0	0 0	0 0	0 0
Passerby Vol:	0 0	0 0	0 0	0 0
Priority Fut:	292 697	83	121 360	202 191 743 181 236 1019
User Adj:	1.00 1.00	1.00	1.00 1.00	1.00 1.00 1.00
PHF Adj:	1.00 1.00	1.00	1.00 1.00	1.00 1.00 1.00
PHF Volume:	292 697	83	121 360	202 191 743 181 236 1019
Reduc Vol:	0 0	0 0	0 0	0 0
Reduced Vol:	292 697	83	121 360	202 191 743 181 236 1019
PCE Adj:	1.00 1.00	1.00	1.00 1.00	1.00 1.00 1.00
MLF Adj:	1.00 1.00	1.00	1.00 1.00	1.00 1.00 1.00
Final Vol.:	292 697	83	121 360	202 191 743 181 236 1019
Capacity Analysis Module:				
Vol/Sat:	0.18 0.18	0.06	0.07 0.09	0.14 0.11 0.20
Crit Moves:	*****	*****	*****	*****
Green Time:	45.0 57.1	57.1	22.7 34.8	34.8 29.4 56.9 101.9
Volume/Cap:	0.74 0.61	0.19	0.61 0.52	0.74 0.74 0.65 0.23
Delay/Veh:	5.60 4.39	3.74	64.2 53.8	62.7 65.6 45.0 17.7
ProgAdjFcrt:	1.00 0.85	1.00	1.00 1.00	1.00 1.00 1.00
AdjDel/Veh:	56.0 37.3	31.8	64.2 45.7	53.3 65.6 38.3 15.0
DesgnQueue:	25 54	6	11 132	18 18 58 9 20 74 3
Saturation Flow Module:				
Sat/Lane:	1800 1800	1800 1800	1800 1800	1800 1800
Adjustment:	0.92 1.06	0.83	0.92 1.06	0.83
Lanes:	1.00 2.00	1.00	2.00 1.00	2.00
Final Sat.:	1662 3800	1487	1662 3800	1487 1662 3800
Capacity Analysis Module:				
Vol/Sat:	0.18 0.18	0.06	0.07 0.09	0.14 0.11 0.20
Crit Moves:	*****	*****	*****	*****
Green Time:	45.0 57.1	57.1	22.7 34.8	34.8 29.4 56.9 101.9
Volume/Cap:	0.74 0.61	0.19	0.61 0.52	0.74 0.74 0.65 0.23
Delay/Veh:	5.60 4.39	3.74	64.2 53.8	62.7 65.6 45.0 17.7
ProgAdjFcrt:	1.00 0.85	1.00	1.00 1.00	1.00 1.00 1.00
AdjDel/Veh:	56.0 37.3	31.8	64.2 45.7	53.3 65.6 38.3 15.0
DesignQueue:	30 54	6	11 132	18 18 58 9 20 74 3

Intersection #1: Middlefield/Shoreline

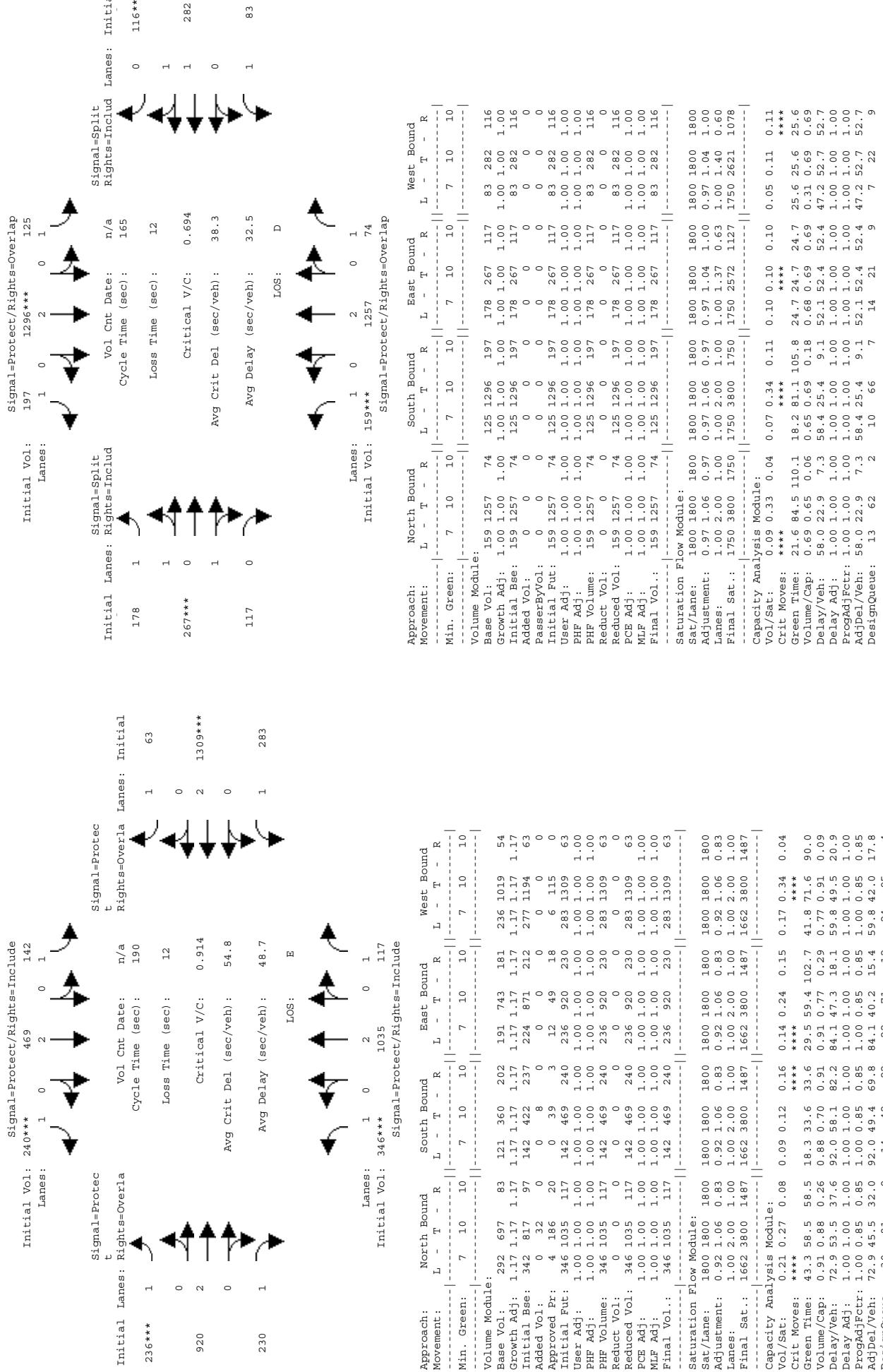


Intersection #1: Middlefield/Shoreline



Level Of Service Computation Report
HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 5

Level Of Service Computation Report
 1985 HCM Operations (Future Volume Alternative)
 PM Peak



Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM Peak

Level Of Service Computation Report
85 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

Signal=Protect/Rights-Include

Initial Vol:	Lanes:	Vol	Cnt	Date
160	0 1	111	1	72***
1	0 1	0	1	

Signal=Protected Rights=Includ

Initial Vol:	Lanes:	Vol	Cnt	Date
n/a	100	112	0	
1	0 1	1	1	809***

Signal=Includ

Initial Vol:	Lanes:	Vol	Cnt	Date
12	1	0	0	
0.713	1	1	1	
26.5	0	0	0	
25.5	1	1	1	LOS: D+

Signal=Protect/Rights-Include									
Lanes:	1	0	1	1	0				
Initial Vol.:	108		462***	275					
Approach:	North Bound	South Bound	East Bound	West Bound					
Movement:	L - T - R	L - T - R	L - T - R	L - T - R					
Min. Green:	7	10	10	7	10	10	7	10	7
Volume Module:	Base Vol.	275	72	181	160	242	743	87	184
Highway Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	108	462	275	72	181	160	242	743	87
Added Vol.:	0	0	0	0	0	0	0	0	0
Passer-byVol:	0	0	0	0	0	0	0	0	0
User Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	108	462	275	72	181	160	242	743	87
Reduc. Vol.:	0	0	0	0	0	0	0	0	0
Reduced Vol.:	108	462	275	72	181	160	242	743	87
PCE Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.::	108	462	275	72	181	160	242	743	87
Saturation Flow Module:	1800	1800	1800	1800	1800	1800	1800	1800	1800
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.04	1.00	0.97	1.05	1.00	0.97	1.03	1.00
Lanes:	1.00	1.23	0.77	1.00	1.04	0.96	1.00	1.78	0.22
Final Sat.:	1750	2318	1380	1750	1963	1735	1750	3312	388
Capacity Analysis Module:	Vol/Sat:	0.06	0.20	0.20	0.04	0.09	0.09	0.14	0.22
Crit Moves:	****				****				0.11
Green Time:	14.2	27.5	27.5	7.0	20.3	20.3	19.1	36.4	17.1
Volume/Cap:	0.43	0.72	0.72	0.45	0.45	0.45	0.72	0.62	0.62
Delay/Veh:	30.6	26.7	26.7	39.3	26.9	26.9	34.0	20.4	31.9
Delay Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdj/Avail:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdj/MaxAvail:	30.6	26.7	26.7	39.3	26.9	26.9	34.0	20.4	31.9

Designqueue : 5 20 12 4 8 / 1 1 28 32 4

Level Of Service Computation Report
HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

Signal=Protect/Rights-Include

Initial Vol:	Lanes:	Vol	Cnt	Date
160	0 1	111	1	72***
1	0 1	0	1	

Signal=Protected Rights=Includ

Initial Vol:	Lanes:	Vol	Cnt	Date
n/a	100	112	0	
1	0 1	1	1	809***

Signal=Includ

Initial Vol:	Lanes:	Vol	Cnt	Date
12	1	0	0	
0.713	1	1	1	
26.5	0	0	0	
25.5	1	1	1	LOS: D+

Initial Vol.: 108 Lanes: 1 Signal=Protect/Rights-Include									
Approach:	North Bound		South Bound		East Bound		West Bound		
Movement:	L - T	- R	L - T	- R	L - T	- R	L - T	- R	
Min. Green:	7	10	10	7	10	10	7	10	10
Volume Module:									
Base Vol.:	108	462	275	72	181	160	242	743	87
Growth Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Base:	108	462	275	72	181	160	242	743	87
Added Vol.:	0	0	0	0	0	0	0	0	0
PasserbyVol.:	0	0	0	0	0	0	0	0	0
Initial Fut. User Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	108	462	275	72	181	160	242	743	87
Reduc. Vol.:	0	0	0	0	0	0	0	0	0
Reduced Vol.:	108	462	275	72	181	160	242	743	87
PCE Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.::	108	462	275	72	181	160	242	743	87
Saturation Flow Module:									
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.04	1.00	0.97	1.05	1.00	0.97	1.03	1.00
Lanes:	1.00	1.23	0.77	1.00	1.04	0.96	1.00	1.78	0.22
Final Sat.:	1750	2318	1380	1750	1963	1735	1750	3312	3886
Capacity Analysis Module:									
Vol/Sat:	0.06	0.20	0.20	0.04	0.09	0.09	0.14	0.22	0.11
Crit Moves:	*****						*****		
Green Time:	14.2	27.5	27.5	7.0	20.3	20.3	19.1	36.4	17.1
Volume/Cap:	0.43	0.72	0.72	0.59	0.45	0.45	0.72	0.62	0.62
Delay/Veh:	30.6	26.7	26.7	39.3	26.9	26.9	34.0	20.4	31.9
Delay Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdj/Fctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdj/Ave:	30.6	26.7	26.7	39.3	26.9	26.9	34.0	20.4	31.9

Designqueue : 5 20 12 4 8 / 1 1 28 32 4

Lev
HCM
1985

Signal=Protect/Rights-Included

Initial Vol:	Lanes:	Vol Cnt Date:	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):	Lanes:	Initial
160	0 1	100	n/a	12	0.713	26.5	25.5	0	.112
141	1	100	100	1	0.713	26.5	25.5	1	809***
72***	0 1	100	100	1	0.713	26.5	25.5	1	184

Signal=Protected Rights=Included

Initial Vol:	Lanes:	Vol Cnt Date:	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):	Lanes:	Initial
242***	1	100	n/a	12	0.713	26.5	25.5	0	.112
743	0 1	100	100	1	0.713	26.5	25.5	1	809***
87	1	100	100	1	0.713	26.5	25.5	1	184

Initial Vol.: 108 Lanes: 1 Signal=Protect/Rights-Include									
Approach:	North Bound		South Bound		East Bound		West Bound		
Movement:	L - T	- R	L - T	- R	L - T	- R	L - T	- R	
Min. Green:	7	10	10	7	10	10	7	10	10
Volume Module:	----- ----- ----- ----- ----- ----- ----- ----- -----								
Base Vol.:	108	462	275	72	181	160	242	743	87
Growth Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse.:	108	462	275	72	181	160	242	743	87
Added Vol.:	0	0	0	0	0	0	0	0	0
PasserbyVol.:	0	0	0	0	0	0	0	0	0
Initial Fut.:	108	462	275	72	181	160	242	743	87
User Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	108	462	275	72	181	160	242	743	87
Reduc. Vol.:	0	0	0	0	0	0	0	0	0
Reduced Vol.:	108	462	275	72	181	160	242	743	87
PCE Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.::	108	462	275	72	181	160	242	743	87
Saturation Flow Module:	----- ----- ----- ----- ----- ----- ----- ----- -----								
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.04	1.00	0.97	1.05	1.00	0.97	1.03	1.00
Lanes:	1.00	1.23	0.77	1.00	1.04	0.96	1.00	1.78	0.22
Final Sat.:	1750	2318	1380	1750	1963	1735	1750	3312	388
Capacity Analysis Module:	----- ----- ----- ----- ----- ----- ----- ----- -----								
Vol/Sat:	0.06	0.20	0.20	0.04	0.09	0.09	0.14	0.22	0.11
Crit Moves:	----- ----- ----- ----- ----- ----- ----- ----- -----								
Green Time:	14.2	27.5	27.5	7.0	20.3	20.3	19.1	36.4	36.4
Volume/Cap:	0.43	0.72	0.72	0.59	0.45	0.45	0.72	0.62	0.62
Delay/Veh:	30.6	26.7	26.7	39.3	26.9	26.9	34.0	20.4	31.9
Delay Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdj/Fctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdj/Ave:	30.6	26.7	26.7	39.3	26.9	26.9	34.0	20.4	31.9

Designqueue : 5 20 12 4 8 / 1 1 28 32 4

Level Of Service Computation Report
HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

Signal=Protect/Rights-Included

Initial Vol:	Lanes:	Vol Cnt Date:	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):	Lanes:	Initial
160	0 1	100	n/a	12	0.713	26.5	25.5	0	.112
141	1	100	100	1	0.713	26.5	25.5	1	809***
72***	0 1	100	100	1	0.713	26.5	25.5	1	184

Signal=Protected Rights=Included

Initial Vol:	Lanes:	Vol Cnt Date:	Cycle Time (sec):	Loss Time (sec):	Critical V/C:	Avg Crit Del (sec/veh):	Avg Delay (sec/veh):	Lanes:	Initial
242***	1	100	n/a	12	0.713	26.5	25.5	0	.112
743	0 1	100	100	1	0.713	26.5	25.5	1	809***
87	1	100	100	1	0.713	26.5	25.5	1	184

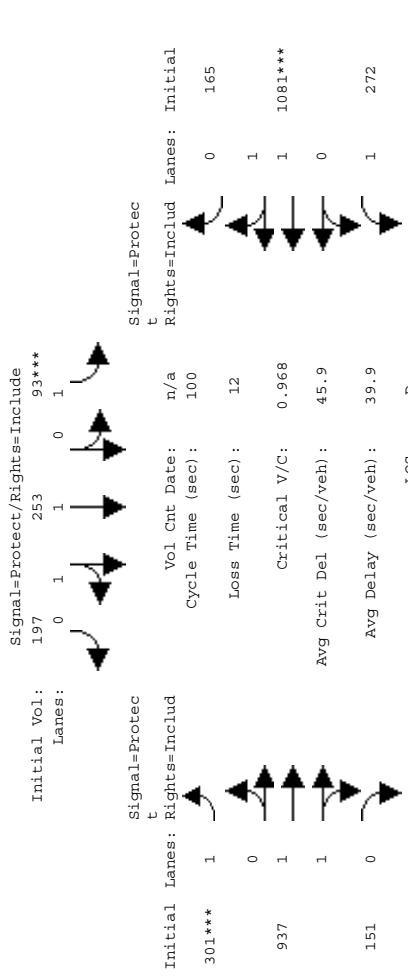
Signal=Protect/Rights-Include												
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T	- R	L - T	- R	L - T	- R	L - T	- R	L - T	- R	L - T	- R
Lanes:	1	0	1	1	1	0	1	1	1	0	1	0
Initial Vol.:	108						432***					
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Volume Module:	----- ----- ----- ----- ----- ----- ----- ----- ----- ----- ----- -----											
Base Vol.:	108	462	275	72	181	160	242	743	87	184	809	112
Growth Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	108	462	275	72	181	160	242	743	87	184	809	112
Added Vol.:	0	0	0	0	0	0	0	0	0	0	0	0
PasserbyVol.:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	108	462	275	72	181	160	242	743	87	184	809	112
User Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHP Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	108	462	275	72	181	160	242	743	87	184	809	112
Reduc. Vol.:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol.:	108	462	275	72	181	160	242	743	87	184	809	112
PCE Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	108	462	275	72	181	160	242	743	87	184	809	112
Saturation Flow Module:	----- ----- ----- ----- ----- ----- ----- ----- ----- ----- ----- -----											
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.97	1.04	1.00	0.97	1.05	1.00	0.97	1.03	1.00	0.97	1.03	1.00
Lanes:	1.00	1.23	0.77	1.00	1.04	0.96	1.00	1.78	0.22	1.00	1.75	0.25
Final Sat.:	1750	2318	1380	1750	1963	1735	1750	3312	388	1750	3250	450
Capacity Analysis Module:	----- ----- ----- ----- ----- ----- ----- ----- ----- ----- ----- -----											
Vol/Sat:	0.06	0.20	0.20	0.04	0.09	0.09	0.14	0.22	0.11	0.25	0.25	0.25
Crit Moves:	----- ----- ----- ----- ----- ----- ----- ----- ----- ----- ----- -----											
Green Time:	14.2	27.5	27.5	7.0	20.3	20.3	19.1	36.4	36.4	17.1	34.4	34.4
Volume/Cap:	0.43	0.72	0.72	0.59	0.45	0.45	0.72	0.62	0.62	0.72	0.72	0.72
Delay/Veh:	30.6	26.7	26.7	39.3	26.9	26.9	34.0	20.4	20.4	31.9	23.2	23.2
Delay Adj.:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdj/Fctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ProgAdj/Ave:	30.6	26.7	26.7	39.3	26.9	26.9	34.0	20.4	20.4	31.9	23.2	23.2

Designqueue : 5 20 12 4 8 / 1 1 28 32 4

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 5

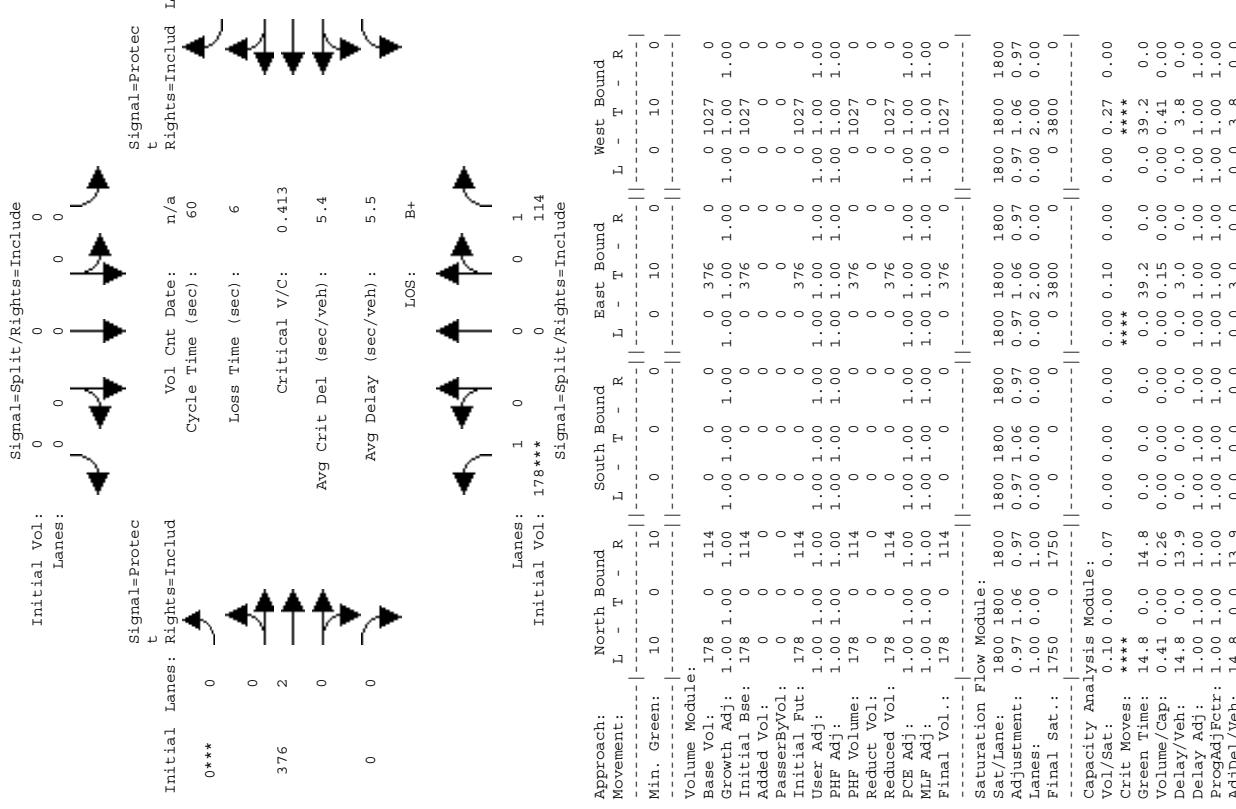
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)

Intersection #3: Moffett/Middlefield



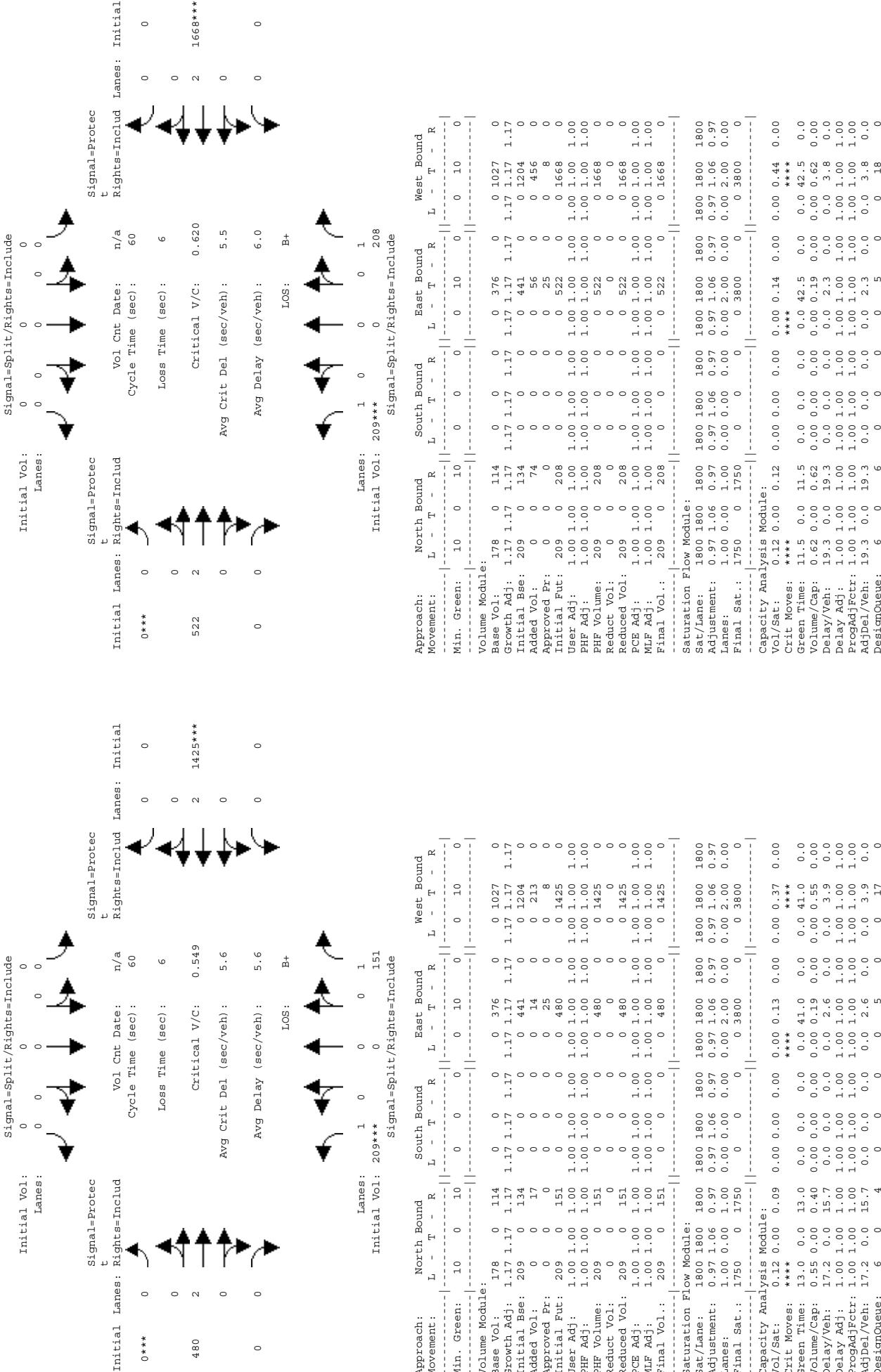
Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	7	10	10	7
Volume Module:	108 462 275	72 181 160	242 743 87	184 809 112
Base Vol:	108 1.18 1.18	1.18 1.18 1.18	1.18 1.18 1.18	1.18 1.18 1.18
Growth Adj:	547 326 85	214 189 80	103 218 95	133 133 32
Initial Bee:	128 547 0	0 8 0	32 54 118	0 0 0
Added Vol:	0 0 16	0 39 8	25 48 0	0 0 0
Approved Pr:	88 184 0	0 14 0	25 50 0	0 0 0
Initial Fut:	216 731 342	93 253 197	301 937 151	272 1081 165
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Volume:	216 731 342	93 253 197	301 937 151	272 1081 165
Reduced Vol:	0 0 0	0 0 0	0 0 0	0 0 0
Reduced Vol:	216 731 342	93 253 197	301 937 151	272 1081 165
PCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
MLF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Vol.:	216 731 342	93 253 197	301 937 151	272 1081 165
Saturation Flow Module:	1800 1800 1800	1800 1800 1800	1800 1800 1800	1800 1800 1800
Sat/Lane:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Adjustment:	0.97 1.04 1.00	0.97 1.05 1.00	0.97 1.03 1.00	0.97 1.03 1.00
Lanes:	1.00 1.35 0.65	1.00 1.10 0.90	1.00 1.71 0.29	1.00 1.73 0.27
Final Sat.:	1.750 2520 1179	1.750 2079 1619	1.750 3486 513	1.750 3210 490
Capacity Analysis Module:	0.12 0.29 0.29	0.05 0.12 0.12	0.17 0.29 0.29	0.16 0.34 0.34
Vol/Sat:	*****	*****	*****	*****
Crit. Moves:	18.3 29.4 29.4	7.0 29.1 18.1	18.1 17.8 33.7	33.7 34.1
Green Time:	14.8 34.1	14.8 0.0	14.8 0.0	14.8 0.0
Volume/Cap:	0.67 0.99 0.99	0.76 0.67 0.67	0.99 0.87 0.87	0.99 0.99
Delay/Veh:	1.7 44.8 44.8	50.2 30.9 30.9	67.3 28.6 28.6	46.0 41.5 41.5
Delay Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
ProgAdjFcrr:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Addl/Veh:	32.7 44.8 44.8	50.2 30.9 30.9	67.3 28.6 28.6	46.0 41.5 41.5
DesignQueue:	10 31 10	50.5 12 9	14 37 14	13 43 7

Intersection #4: Moffett/85 NB Ramp



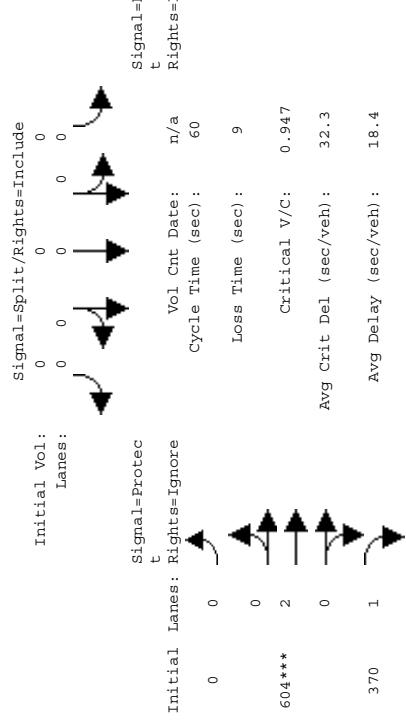
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 5



Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 5

Intersection #5: Moffett/101 SB Ramps Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)



Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	10	0	10	0

Volume Module:	Base Vol:	263	0	133	0	0	1	0	389	294	344	829	0	95	0	0	242	280	216	875	0		
Growth Adj:	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.00		
Initial Bee:	308	0	156	0	0	0	0	0	456	345	403	972	0	95	0	0	0	242	280	216	875	0	
Added Vol:	0	0	70	0	0	0	0	0	129	0	349	456	0	0	0	0	0	0	0	0	0	0	
Approved Pr:	9	0	19	0	0	0	0	0	25	62	29	0	0	0	0	0	0	0	0	0	0	0	
Initial Fut:	317	0	245	0	0	0	0	0	604	370	814	1457	0	95	0	0	0	242	280	216	875	0	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
PHF Volume:	317	0	245	0	0	0	0	0	604	0	814	1457	0	95	0	0	0	242	280	216	875	0	
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Final Vol.:	317	0	245	0	0	0	0	0	604	0	814	1457	0	95	0	0	0	242	280	216	875	0	
Saturation Flow Module:	Sat Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800		
Adjustment:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	1.06	0.97	0.97	1.06	0.97	0.97	1.06	0.97	1.06	0.97	1.06	0.97	1.06		
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00	0.00	0.00	0.00	0.00	1.00	2.00	0.00	0.00		
Final Sat.:	1750	0	1750	0	0	0	0	0	3800	1750	3800	0	0	0	0	0	0	3800	1750	3800	0	0	
Capacity Analysis Module:	Vol/Sat:	0.18	0.00	0.14	0.00	0.00	0.00	0.00	0.16	0.00	0.47	0.38	0.00	0.17	0.00	0.05	0.00	0.00	0.06	0.00	0.12	0.23	0.00
Crit Moves:	*****	11.5	0.0	40.9	0.0	0.0	0.0	0.0	10.1	0.0	29.5	39.5	0.0	41.0	0.0	0.0	0.0	0.0	0.0	0.0	17.7	27.2	0.0
Green Time:	11.5	0.0	40.9	0.0	0.0	0.0	0.0	0.0	0.95	0.0	0.95	0.58	0.0	0.43	0.0	0.0	0.0	0.38	0.0	0.0	0.43	0.51	0.00
Volume/Cap:	0.95	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.95	0.0	0.08	0.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	
Delay/Veh:	44.1	0.0	2.7	0.0	0.0	0.0	0.0	0.0	35.9	0.0	25.0	4.6	0.0	2.4	0.0	0.0	0.0	17.1	0.0	13.6	9.0	0.00	
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
ProgAdjFcrr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
AddJl/Ver:	44.1	0.0	2.7	0.0	0.0	0.0	0.0	0.0	35.9	0.0	25.0	4.6	0.0	2.4	0.0	0.0	0.0	17.1	0.0	13.6	9.0	0.00	
DesignQueue:	1.9	0	3	0	0	0	0	0	17	0	16	18	0	0	0	0	0	0	0	17	0	0	

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	10	0	10	0

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	10	0	10	0

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	10	0	10	0

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	10	0	10	0

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	10	0	10	0

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	10	0	10	0

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	10	0	10	0

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	10	0	10	0

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	10	0	10	0

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	10	0	10	0

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	10	0	10	0

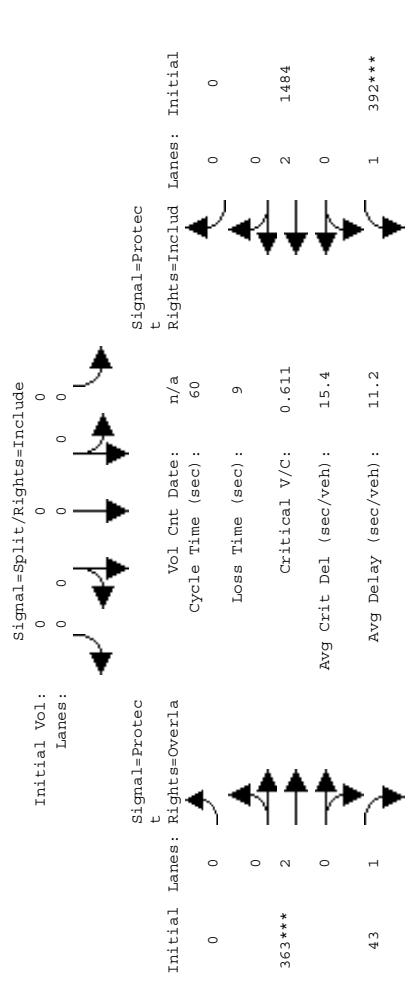
Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	10	0	10	0

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T -	

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 5

Intersection #6: Moffett/101 NB Ramps

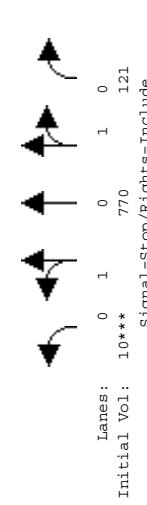
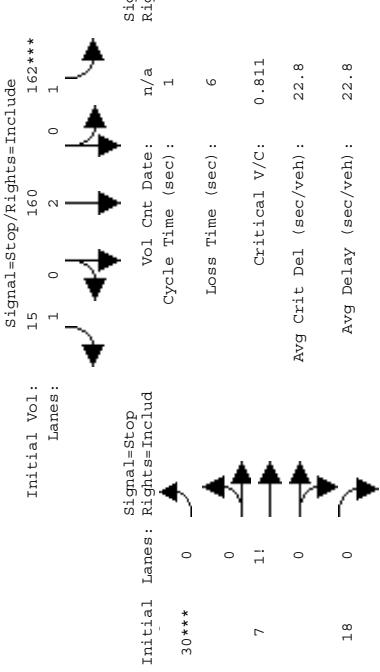


Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	10	0	10	0
Volume Module:				

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	10	0	10	0
Volume Module:				
Base Vol:	298	0	95	0
Growth Adj:	1.17	1.17	1.17	1.17
Initial Bee:	349	0	111	0
Added Vol:	0	24	0	50
Approved Pr:	0	65	0	29
Initial Fut:	349	0	200	0
User Adj:	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00
PHF Volume:	349	0	200	0
Reduced Vol:	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00
Final Vol.:	349	0	200	0
Saturation Flow Module:				
Sat/Lane:	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	1.06
Lanes:	1.00	0.00	1.00	0.00
Final Sat.:	1750	0	1750	0
Capacity Analysis Module:				
Vol/Sat:	0.20	0.00	0.11	0.00
Crit Moves:	*****	*****	*****	*****
Green Time:	19.3	0.0	41.0	0.0
Volume/Cap:	0.62	0.00	0.17	0.00
Delay/Veh:	1.46	0.0	2.6	0.0
Delay Adj:	1.00	1.00	1.00	1.00
ProgAdjFcrr:	1.00	1.00	1.00	1.00
AddJl/Veh:	14.6	0.0	2.6	0.0
DesignQueue:	8	0	2	0

Level Of Service Computation Report
1997 HEM 4-Way Stop (Future Volume Alternative)
PM Peak

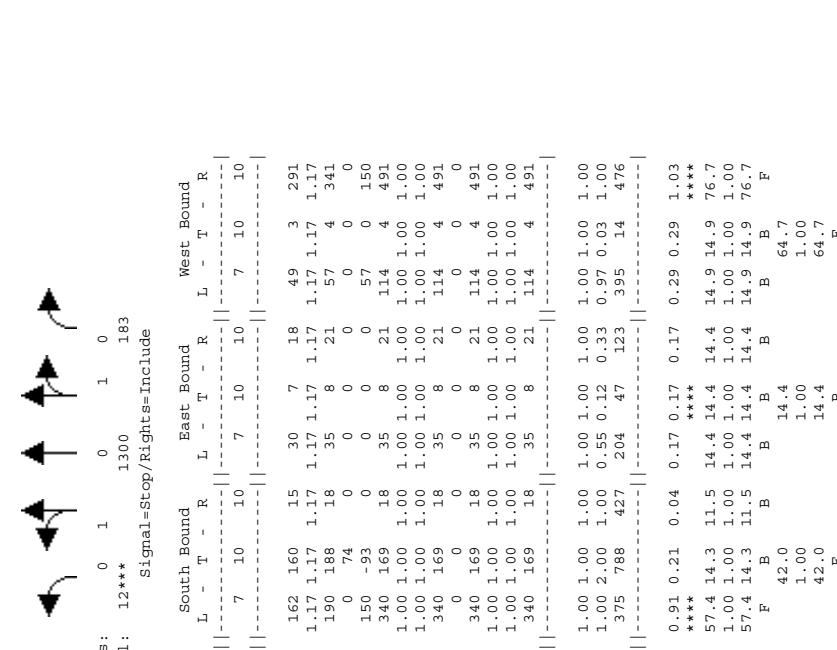
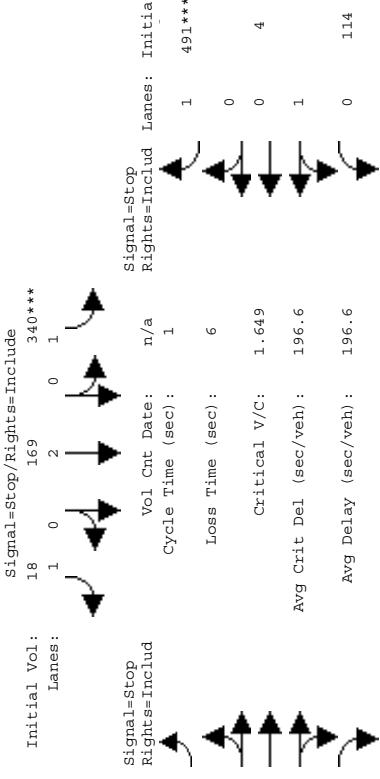
Intersection #7: Moffett-Clark/Moffett Extension



Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	7 10 10	7 10 10	7 10 10	7 10 10
Volume Module:	10 770 121	162 160 15	30 7 18 49 3	291
Base Vol:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00
Growth Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00
Initial Bee:	10 770 121	162 160 15	30 7 18 49 3	291
Added Vol:	0 0 0	0 0 0	0 0 0	0 0 0
Passerby Vol:	0 0 0	0 0 0	0 0 0	0 0 0
Priority Fct:	1.0 770 121	162 160 15	30 7 18 49 3	291
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00
PHF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00
PHF Volume:	10 770 121	162 160 15	30 7 18 49 3	291
Reducit Vol:	0 0 0	0 0 0	0 0 0	0 0 0
Reduced Vol:	10 770 121	162 160 15	30 7 18 49 3	291
PCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00
MLF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00
Final Vol.:	10 770 121	162 160 15	30 7 18 49 3	291
Saturation Flow Module:				
Adjustment:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Lanes:	0.02 1.71 0.27	1.00 2.00	1.00 0.54 0.13	0.94 0.06 1.00
Final Sat.:	12 962 154	422 889 234	55 484 141	25 515
Capacity Analysis Module:				
Crit Moves:	0.31 0.80 0.79	0.38 0.18 0.03	0.13 0.13 0.13	0.12 0.12 0.57
Vol Sat:	0.38 ***	0.38 ***	0.38 ***	0.38 ***
Delay/Veh:	30.7 29.4 27.7	15.8 12.1 10.0	12.0 12.0 12.0	11.7 11.7 17.3
Adel/Veh:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Los by Move:	D D C	D D C	B B B	C B B
ApproachDel:	29.2	13.8	12.0	16.4
Delay Adj:	1.00	1.00	1.00	1.00
ApprAdjDel:	29.2	13.8	12.0	16.4
Los by Appr:	D	B	C	E

Level of Service Computation Report
1997 HEM 4-Way Stop (Future Volume Alternative)
PM 2013 Project Alt. 1

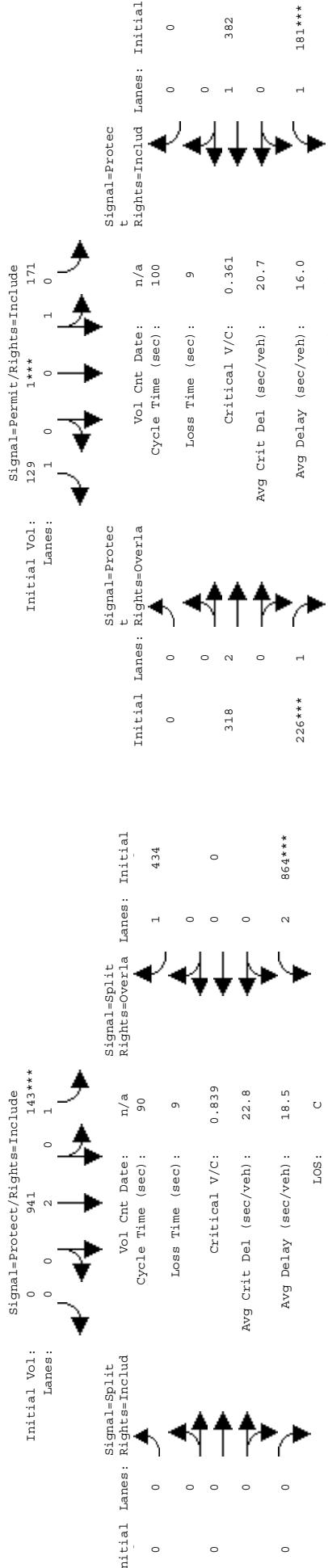
Intersection #7: Moffett-Clark/Moffett Extension



Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	7 10 10	7 10 10	7 10 10	7 10 10
Volume Module:	10 770 121	162 160 15	30 7 18 49 3	291
Base Vol:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00
Growth Adj:	1.17 1.17 1.17	1.17 1.17 1.17	1.17 1.17 1.17	1.17 1.17 1.17
Initial Bee:	12 903 142	190 188 18	35 35 8	21 57 4
Added Vol:	0 504 0	0 74 0	0 0 0	0 0 0
Approved Pr:	0 -107 41	150 -93 0	0 0 0	57 0
Initial Fct:	12 1300 183	340 159 18	35 35 8	21 114 4
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Volume:	12 1300 183	340 169 18	35 35 8	21 114 4
Reducit Vol:	0 0 0	0 0 0	0 0 0	0 0 0
Reduced Vol:	12 1300 183	340 169 18	35 35 8	21 114 4
PCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
MLF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Vol.:	12 1300 183	340 169 18	35 35 8	21 114 4
Saturation Flow Module:				
Adjustment:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Lanes:	0.02 1.74 0.24	1.00 2.00	1.00 0.55 0.12	0.97 0.03 1.00
Final Sat.:	7 796 114	375 788 427	204 47 123	395 14 476
Capacity Analysis Module:				
Crit Moves:	1.05 1.63 1.61	0.91 0.21 0.04	0.17 0.17 0.17	0.17 0.29 0.29
Vol Sat:	0.02 1.74 0.24	1.00 2.00	1.00 0.55 0.12	0.97 0.03 1.00
Delay/Veh:	320.9	314 304.2	57.4 14.3	11.5 14.4 14.4
Adel/Veh:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Los by Move:	F P	F B	B B	F P
ApproachDel:	312.6	42.0	14.4	64.7
Delay Adj:	1.00	1.00	1.00	1.00
ApprAdjDel:	312.6	42.0	14.4	64.7
Los by Appr:	P E	B B	B B	F P

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 5

Level Of Service Computation Report
85 HCM Operations (Future Volume Alternative)
PM Peak

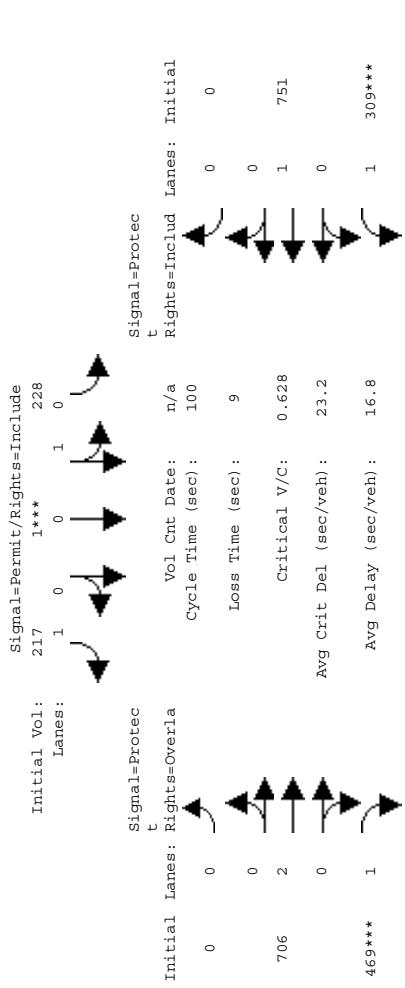


Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 5

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 5

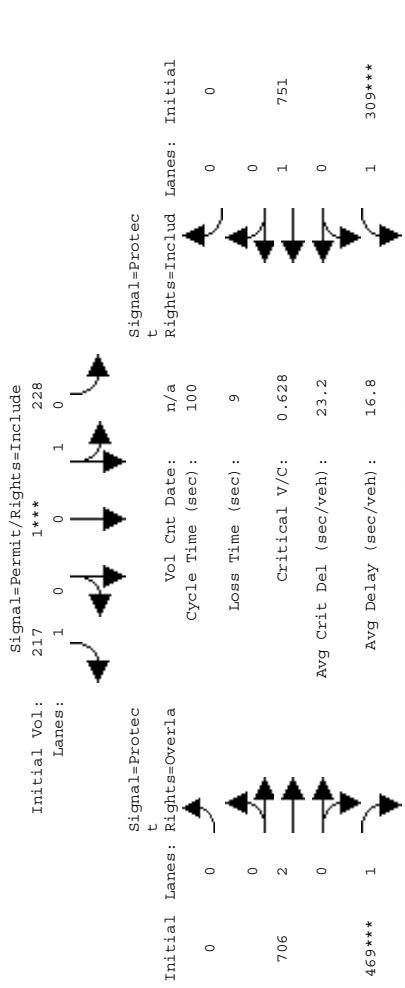
Intersection #10: Ellis/101 SB Ramps



Signal=Permit/Rights=Ignore

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	0	0	10	10
Volume Module:				
Base Vol:	0	171	129	226
Growth Adj:	1.17	1.17	1.17	1.17
Initial Bee:	0	200	151	373
Added Vol:	0	0	0	159
Approved Pr:	0	28	66	204
Initial Fut:	0	228	1	217
User Adj:	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00
PHF Volume:	0	228	1	217
Reduced Vol:	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00
Final Vol.:	0	228	1	217
Saturation Flow Module:				
Sat/Lane:	1800	1800	1800	1800
Adjustment:	0.971	0.97	0.97	0.97
Lanes:	0.00	0.00	0.99	0.01
Final Sat.:	0	0	1792	8
Capacity Analysis Module:				
Vol/Sat:	0.00	0.00	0.13	0.12
Crit Moves:	0.00	0.00	0.00	0.00
Green Time:	0.0	0.0	20.2	20.2
Volume/Cap:	0.00	0.00	0.63	0.63
Delay/Veh:	0.0	0.0	30.1	30.1
Delay Adj:	1.00	1.00	1.00	1.00
ProgAdjFcrr:	1.00	1.00	1.00	1.00
AddJl/Veh:	0.0	0.0	30.1	30.1
DesignQueue:	0	0	10	0

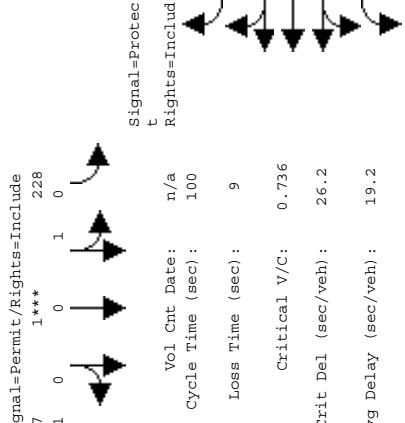
Intersection #10: Ellis/101 SB Ramps



Signal=Permit/Rights=Ignore

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	0	0	10	10
Volume Module:				
Base Vol:	0	171	117	117
Growth Adj:	1.17	1.17	1.17	1.17
Initial Bee:	0	200	151	373
Added Vol:	0	0	0	159
Approved Pr:	0	28	66	204
Initial Fut:	0	228	1	217
User Adj:	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00
PHF Volume:	0	228	1	217
Reduced Vol:	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00
Final Vol.:	0	228	1	217
Saturation Flow Module:				
Sat/Lane:	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	1.06
Lanes:	0.00	0.00	0.99	0.01
Final Sat.:	0	0	1792	8
Capacity Analysis Module:				
Vol/Sat:	0.00	0.00	0.13	0.12
Crit Moves:	0.00	0.00	0.00	0.00
Green Time:	0.0	0.0	20.2	20.2
Volume/Cap:	0.00	0.00	0.63	0.63
Delay/Veh:	0.0	0.0	30.1	30.1
Delay Adj:	1.00	1.00	1.00	1.00
ProgAdjFcrr:	1.00	1.00	1.00	1.00
AddJl/Veh:	0.0	0.0	30.1	30.1
DesignQueue:	0	0	10	0

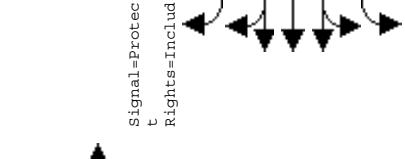
Intersection #10: Ellis/101 SB Ramps



Signal=Permit/Rights=Ignore

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	0	0	10	10
Volume Module:				
Base Vol:	0	171	117	117
Growth Adj:	1.17	1.17	1.17	1.17
Initial Bee:	0	200	151	373
Added Vol:	0	0	0	159
Approved Pr:	0	28	66	204
Initial Fut:	0	228	1	217
User Adj:	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00
PHF Volume:	0	228	1	217
Reduced Vol:	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00
Final Vol.:	0	228	1	217
Saturation Flow Module:				
Sat/Lane:	1800	1800	1800	1800
Adjustment:	0.97	1.06	0.97	1.06
Lanes:	0.00	0.00	0.99	0.01
Final Sat.:	0	0	1792	8
Capacity Analysis Module:				
Vol/Sat:	0.00	0.00	0.13	0.12
Crit Moves:	0.00	0.00	0.00	0.00
Green Time:	0.0	0.0	20.2	20.2
Volume/Cap:	0.00	0.00	0.63	0.63
Delay/Veh:	0.0	0.0	30.1	30.1
Delay Adj:	1.00	1.00	1.00	1.00
ProgAdjFcrr:	1.00	1.00	1.00	1.00
AddJl/Veh:	0.0	0.0	30.1	30.1
DesignQueue:	0	0	10	0

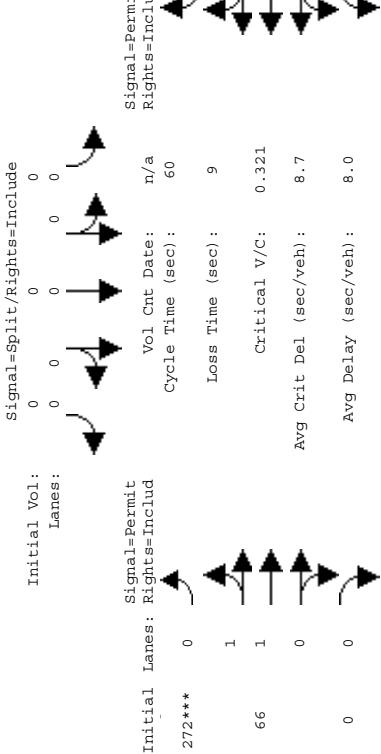
Intersection #10: Ellis/101 SB Ramps



Signal=Permit/Rights=Ignore

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM Peak

Level Of Service Computation Report
HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

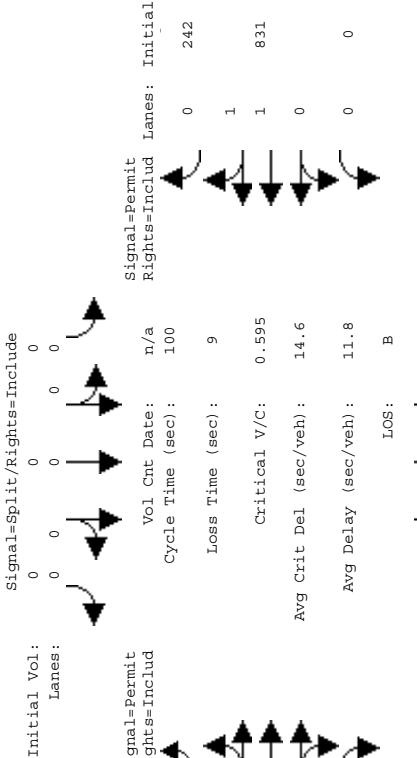


Lanes: 1 0 0 0 1
Initial Vol: 212*** 18 58

Approach:	North Bound	South Bound	East Bound	West Bound
L - T - R movement:	-----	-----	-----	-----
Min. Green:	10 10 10 -----	0 0 0 -----	10 10 0 -----	0 10 0 -----
Volume Module:	212 18 58 -----	0 0 0 -----	272 66 0 -----	0 355 170 -----
Base Vol:	1.00 1.00 1.00 -----	1.00 1.00 1.00 -----	1.00 1.00 1.00 -----	1.00 1.00 1.00 -----
Growth Adj:	0.32 0.12 0.12 -----	0.00 0.00 0.00 -----	0.32 0.07 0.00 -----	0.00 0.29 0.29 -----
Initial Base:	212 18 58 -----	0 0 0 -----	272 66 0 -----	0 355 170 -----
Passenger Vol:	0 0 0 -----	0 0 0 -----	0 0 0 -----	0 0 0 -----
PassengerByVol:	0 0 0 -----	0 0 0 -----	0 0 0 -----	0 0 0 -----
Initial Fut:	212 18 58 -----	0 0 0 -----	272 66 0 -----	0 355 170 -----
User Adj:	1.00 1.00 1.00 -----	1.00 1.00 1.00 -----	1.00 1.00 1.00 -----	1.00 1.00 1.00 -----
HFF Adj:	1.00 1.00 1.00 -----	1.00 1.00 1.00 -----	1.00 1.00 1.00 -----	1.00 1.00 1.00 -----
HFF Volume:	212 18 58 -----	0 0 0 -----	272 66 0 -----	0 355 170 -----
Reduced Vol:	0 0 0 -----	0 0 0 -----	0 0 0 -----	0 0 0 -----
Reduced Vol.:	212 18 58 -----	0 0 0 -----	272 66 0 -----	0 355 170 -----
CEC Adj:	1.00 1.00 1.00 -----	1.00 1.00 1.00 -----	1.00 1.00 1.00 -----	1.00 1.00 1.00 -----
CEC Volume:	212 18 58 -----	0 0 0 -----	272 66 0 -----	0 355 170 -----
Saturation Flow Module:	212 18 58 -----	0 0 0 -----	272 66 0 -----	0 355 170 -----
saturation/Lane:	1800 1800 1800 -----	1800 1800 1800 -----	1800 1800 1800 -----	1800 1800 1800 -----
CEC Adj:	1.00 1.00 1.00 -----	1.00 1.00 1.00 -----	1.00 1.00 1.00 -----	1.00 1.00 1.00 -----
Primal Vol.:	212 18 58 -----	0 0 0 -----	272 66 0 -----	0 355 170 -----
Capacity Analysis Module:	212 18 58 -----	0 0 0 -----	272 66 0 -----	0 355 170 -----
Primal Sat.:	1800 426 1374 -----	0 0 0 -----	1750 1900 0 -----	0 2501 1158 -----
Optimal Sat.:	1800 1800 1800 -----	1800 1800 1800 -----	1800 1800 1800 -----	1800 1800 1800 -----
Optimal Moves:	*****	*****	*****	*****
Optimal Time:	22.0 22.0 22.0 -----	0.0 0.0 0.0 -----	29.0 29.0 0.0 -----	0.0 29.0 29.0 -----
GreenTime/Cap:	10.4 9.6 9.6 -----	0.00 0.00 0.00 -----	7.3 6.3 0.0 -----	0.00 0.29 0.29 -----
Delay/Veh:	1.00 1.00 1.00 -----	1.00 1.00 1.00 -----	1.00 1.00 1.00 -----	1.00 1.00 1.00 -----
ProgAdj:	1.00 1.00 1.00 -----	1.00 1.00 1.00 -----	1.00 1.00 1.00 -----	1.00 1.00 1.00 -----
ProgAdjctr:	1.00 1.00 1.00 -----	1.00 1.00 1.00 -----	1.00 1.00 1.00 -----	1.00 1.00 1.00 -----
ProgAdjDm:	10.4 9.6 9.6 -----	0.00 0.00 0.00 -----	7.3 6.3 0.0 -----	0.0 7.1 7.1 -----
ProgAdjDm:	5.0 5.0 5.0 -----	0.00 0.00 0.00 -----	5.1 5.1 0.0 -----	0.6 3.0 3.0 -----

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

OF Service Computation Report
Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

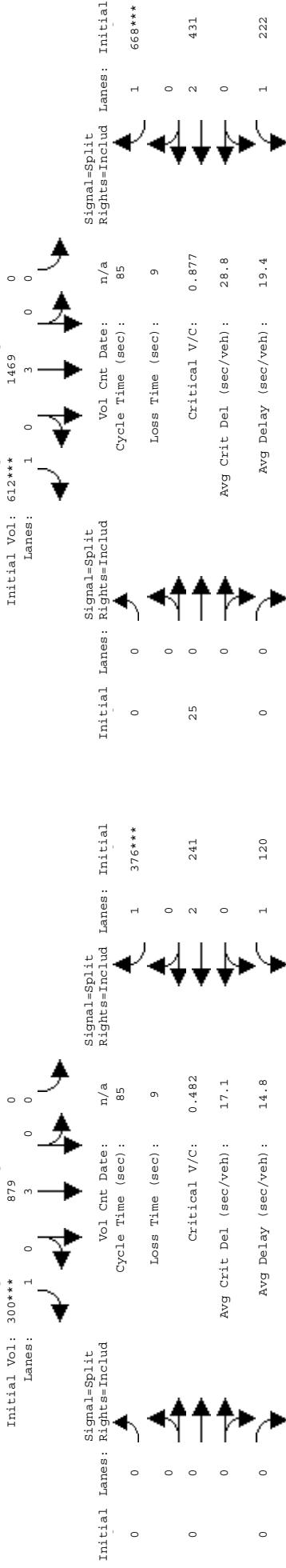


Lanes: 1 0 0 0 1
Initial Vol: 336*** 21 35

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM Peak

Intersection #13: 237 WB Ramps/Middlefield

Signal=Protect/Rights=Include



Initial Vol: 141***
Lanes: 2, 0, 0
Initial Vol: 321, 0
Initial Vol: 141***
Lanes: 2, 0, 0

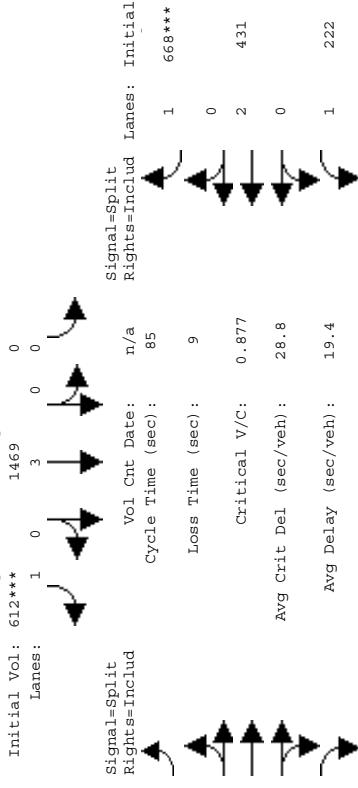
Signal=Protect/Rights=Include

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	7 10	0 10	0 10	10 10
Volume Module:				
Base Vol:	141 321	0 0	879 300	0 0
Growth Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
Initial Bee:	141 321	0 0	879 300	0 0
Added Vol:	0 0	0 0	0 0	0 0
Passerby Vol:	0 0	0 0	0 0	0 0
Priority Fct:	141 321	0 0	879 300	0 0
User Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Volume:	141 321	0 0	879 300	0 0
Reducit Vol:	0 0	0 0	0 0	0 0
Reduced Vol:	141 321	0 0	879 300	0 0
PCE Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
MLF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
Final Vol.:	141 321	0 0	879 300	0 0
Saturation Flow Module:				
Sat/Lane:	1800 1800	1800 1800	1800 1800	1800 1800
Adjustment:	0.88 1.06	0.97 1.06	0.97 1.06	0.97 1.06
Lanes:	2,000 2,000	0,000 3,000	1,000 0,000	1,000 2,000
Final Sat.:	3150 3800	0 0	5700 1750	0 0
Capacity Analysis Module:				
Vol/Sat:	0.04 0.08	0.00 0.15	0.17 0.00	0.00 0.06
Crit Moves:	****	****	****	****
Green Time:	7.9 38.1	0.0 30.2	30.2 0.0	0.0 37.9
Volume/Cap:	0.48 0.19	0.00 0.43	0.48 0.00	0.00 0.14
Delay/Veh:	28.8 10.7	0.0 16.0	16.7 0.0	0.0 10.7
ProgAdjFctr:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
AddDel/Veh:	28.8 10.7	0.0 16.0	16.7 0.0	0.0 10.7
DesInqueue:	6 9	0 0	28 10	0 0

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

Intersection #13: 237 WB Ramps/Middlefield

Signal=Protect/Rights=Include



Initial Vol: 165***
Lanes: 2, 0, 0

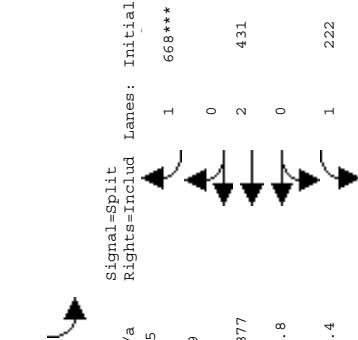
Signal=Protect/Rights=Include

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	7 10	0 10	0 10	10 10
Volume Module:				
Base Vol:	141 321	0 0	879 300	0 0
Growth Adj:	1.17 1.17	1.17 1.17	1.17 1.17	1.17 1.17
Initial Bee:	165 376	0 0	352 0	0 0
Added Vol:	0 16	0 0	58 0	0 0
Approved Pr:	0 132	0 0	381 210	0 25
Initial Fct:	165 524	0 0	1459 612	0 25
User Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Volume:	165 524	0 0	1459 612	0 25
Reducit Vol:	0 0	0 0	0 0	0 0
Reduced Vol:	165 524	0 0	1469 612	0 25
PCE Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
MLF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
Final Vol.:	165 524	0 0	1469 612	0 25
Saturation Flow Module:				
Sat/Lane:	1800 1800	1800 1800	1800 1800	1800 1800
Adjustment:	0.88 1.06	0.97 1.06	0.97 1.06	0.97 1.06
Lanes:	2,000 2,000	0,000 3,000	1,000 0,000	1,000 2,000
Final Sat.:	3150 3800	0 0	5700 1750	0 0
Capacity Analysis Module:				
Vol/Sat:	0.05 0.14	0.00 0.26	0.35 0.00	0.13 0.11
Crit Moves:	****	****	****	****
Green Time:	7.0 40.0	0.0 33.0	33.0 0.0	0.0 36.0
Volume/Cap:	0.64 0.29	0.00 0.56	0.90 0.00	0.30 0.27
Delay/Veh:	32.2 10.5	0.0 16.8	29.4 0.0	0.0 12.4
ProgAdjFctr:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
AddDel/Veh:	32.2 10.5	0.0 16.8	29.4 0.0	0.0 12.4
DesInqueue:	7 14	0 0	46 19	0 0

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

Intersection #13: 237 WB Ramps/Middlefield

Signal=Protect/Rights=Include



Initial Vol: 165***
Lanes: 2, 0, 0

Signal=Protect/Rights=Include

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	7 10	0 10	0 10	10 10
Volume Module:				
Base Vol:	141 321	0 0	879 300	0 0
Growth Adj:	1.17 1.17	1.17 1.17	1.17 1.17	1.17 1.17
Initial Bee:	165 376	0 0	352 0	0 0
Added Vol:	0 16	0 0	58 0	0 0
Approved Pr:	0 132	0 0	381 210	0 25
Initial Fct:	165 524	0 0	1459 612	0 25
User Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Volume:	165 524	0 0	1459 612	0 25
Reducit Vol:	0 0	0 0	0 0	0 0
Reduced Vol:	165 524	0 0	1469 612	0 25
PCE Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
MLF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
Final Vol.:	165 524	0 0	1469 612	0 25
Saturation Flow Module:				
Sat/Lane:	1800 1800	1800 1800	1800 1800	1800 1800
Adjustment:	0.88 1.06	0.97 1.06	0.97 1.06	0.97 1.06
Lanes:	2,000 2,000	0,000 3,000	1,000 0,000	1,000 2,000
Final Sat.:	3150 3800	0 0	5700 1750	0 0
Capacity Analysis Module:				
Vol/Sat:	0.05 0.14	0.00 0.26	0.35 0.00	0.13 0.11
Crit Moves:	****	****	****	****
Green Time:	7.0 40.0	0.0 33.0	33.0 0.0	0.0 36.0
Volume/Cap:	0.64 0.29	0.00 0.56	0.90 0.00	0.30 0.27
Delay/Veh:	32.2 10.5	0.0 16.8	29.4 0.0	0.0 12.4
ProgAdjFctr:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
AddDel/Veh:	32.2 10.5	0.0 16.8	29.4 0.0	0.0 12.4
DesInqueue:	7 14	0 0	46 19	0 0

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 5

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM Peak

`gnal=Protect/Rights=Include`

Initial Vol: 663*** Lanes: 1

Signal=Protect/Rights=Include
Signal=Split Rights=Include

Vol Cnt Date: 1534
Cycle Time (sec): 3

Loss Time (sec): 0

Critical V/C: 85

Avg Crit Del (sec/veh): 9

Avg Delay (sec/veh): 32.8

n/a

85

9

0.909

25

0

0

0

0

Lanes: 2 0 2 0 0
Initial Vol: 165*** 555 0
Signal=Protect/Rights=Include

Level Of
1985 HCM Opera

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM Peak

`gnal=Protect/Rights=Include`

Initial Vol: 663*** Lanes: 1

Initial Vol: 1534 Lanes: 0

Signal=Split Rights=Include

Vol Cnt Date: 85

Cycle Time (sec): 85

Loss Time (sec): 9

Critical V/C: 0.909

Avg Crit Del (sec/veh): 32.8

Avg Delay (sec/veh): 20.6

Lanes: 2 0 2 0 0
Initial Voi: 165*** 555 0
Signal=Protect/Rights=Include

Level Of
1985 HCM Opera

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM Peak

`gnal=Protect/Rights=Include`

Initial Vol: 663*** Lanes: 1

Signal=Protect/Rights=Include
Signal=Split Rights=Include

Vol Cnt Date: 1534
Cycle Time (sec): 3

Loss Time (sec): 0

Critical V/C: 85

Avg Crit Del (sec/veh): 9

Avg Delay (sec/veh): 32.8

n/a

85

9

0.909

25

0

0

0

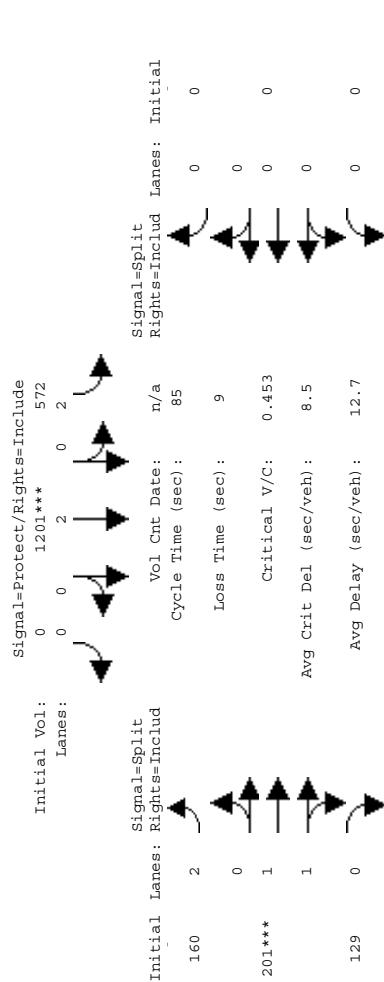
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Lanes: 2 0 2 0 0
Initial Voi: 165*** 555 0
Signal=Protect/Rights=Include

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
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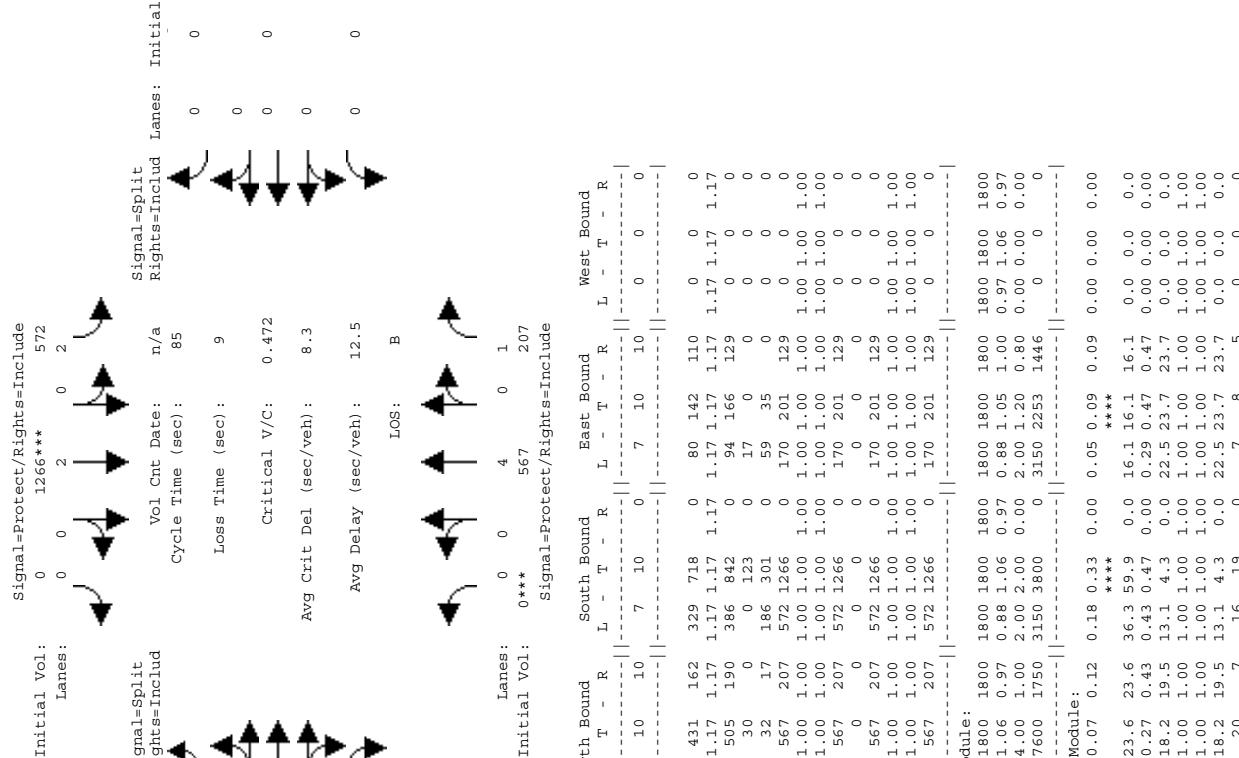
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 5

Intersection #14: 237 EB Ramps/Middlefield



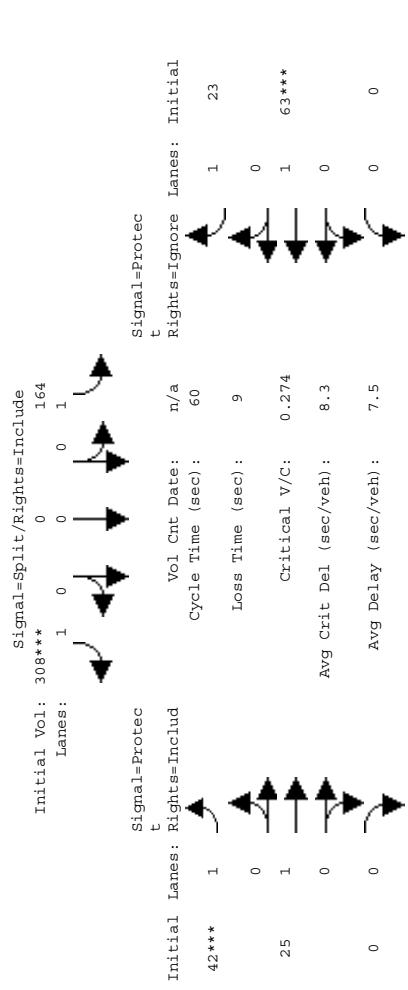
Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	0 10 10	0 7 10	0 7 10	0 7 10
Volume Module:				
Base Vol:	0 431 162	329 718	0 80 142	110 0
Growth Adj:	1.17 1.17	1.17 1.17	1.17 1.17	1.17 1.17
Initial Bce:	505 190	386 842	94 166	129 0
Added Vol:	0 9	0 58	0 7	0 0
Approved Pr:	0 32 17	186 301	59 35	0 0
Initial Fut:	0 546 207	572 1201	0 160 201	129 0
User Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Volume:	0 546 207	572 1201	0 160 201	129 0
Reducit Vol:	0 0	0 0	0 0	0 0
Reduced Vol:	0 546 207	572 1201	0 160 201	129 0
PCE Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
MLF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
Final Vol.:	0 546 207	572 1201	0 160 201	129 0
Capacity Analysis Module:				
Vol/Sat:	0.00 0.07 0.12	0.18 0.32	0.00 0.05 0.09	0.00 0.00 0.00
Crit Moves:	*****	*****	*****	*****
Green Time:	0.0 23.4	35.9 59.3	0.0 16.7	0.0 16.7
Volume/Cap:	0.00 0.26	0.43 0.45	0.00 0.26	0.45 0.45
Delay/Veh:	0.0 18.3	19.7 13.3	0.0 22.0	23.2 0.0
ProgAdjFcrt:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
AddDel/Veh:	0.0 18.3	19.7 13.3	0.0 22.0	23.2 0.0
Desgnqueue:	0 19	7 16	0 6	8 5

Intersection #14: 237 EB Ramps/Middlefield

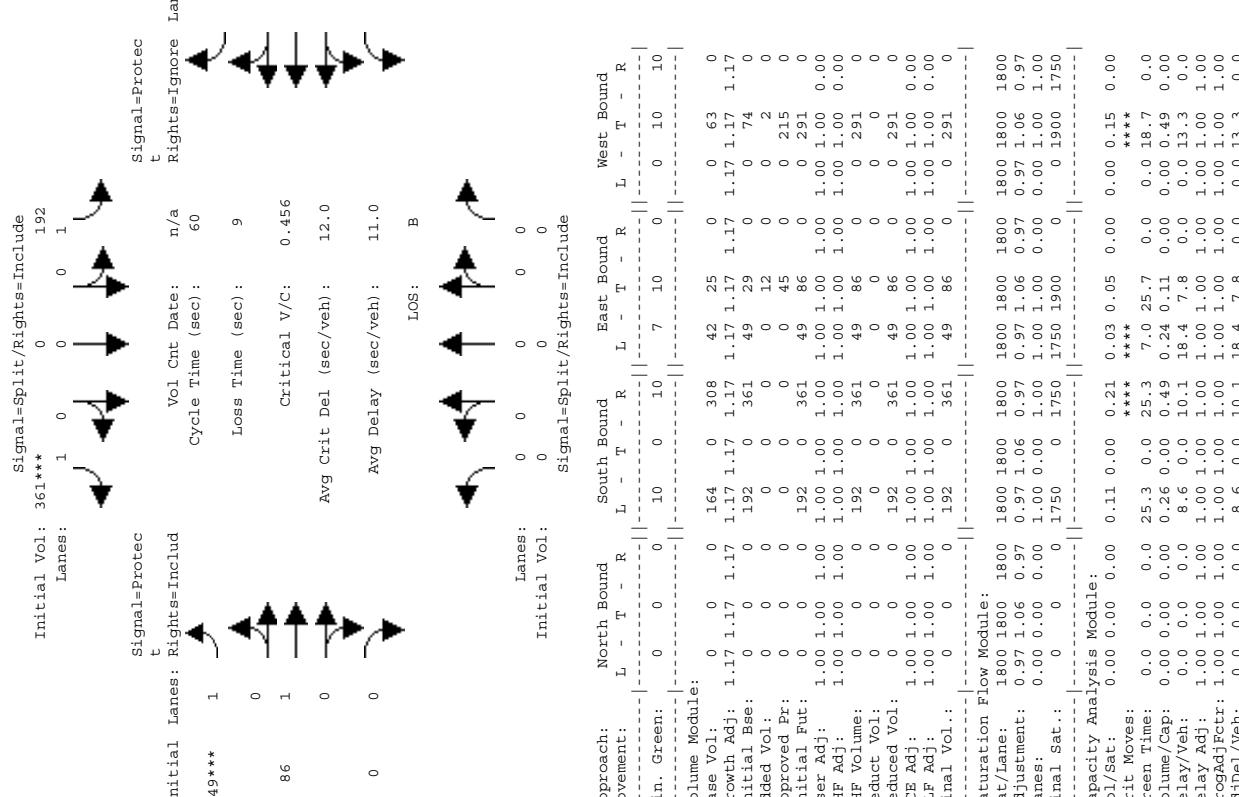


Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM Peak

Intersection #15: Manila/H St.
Intersection #15: Manila/H St.
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1



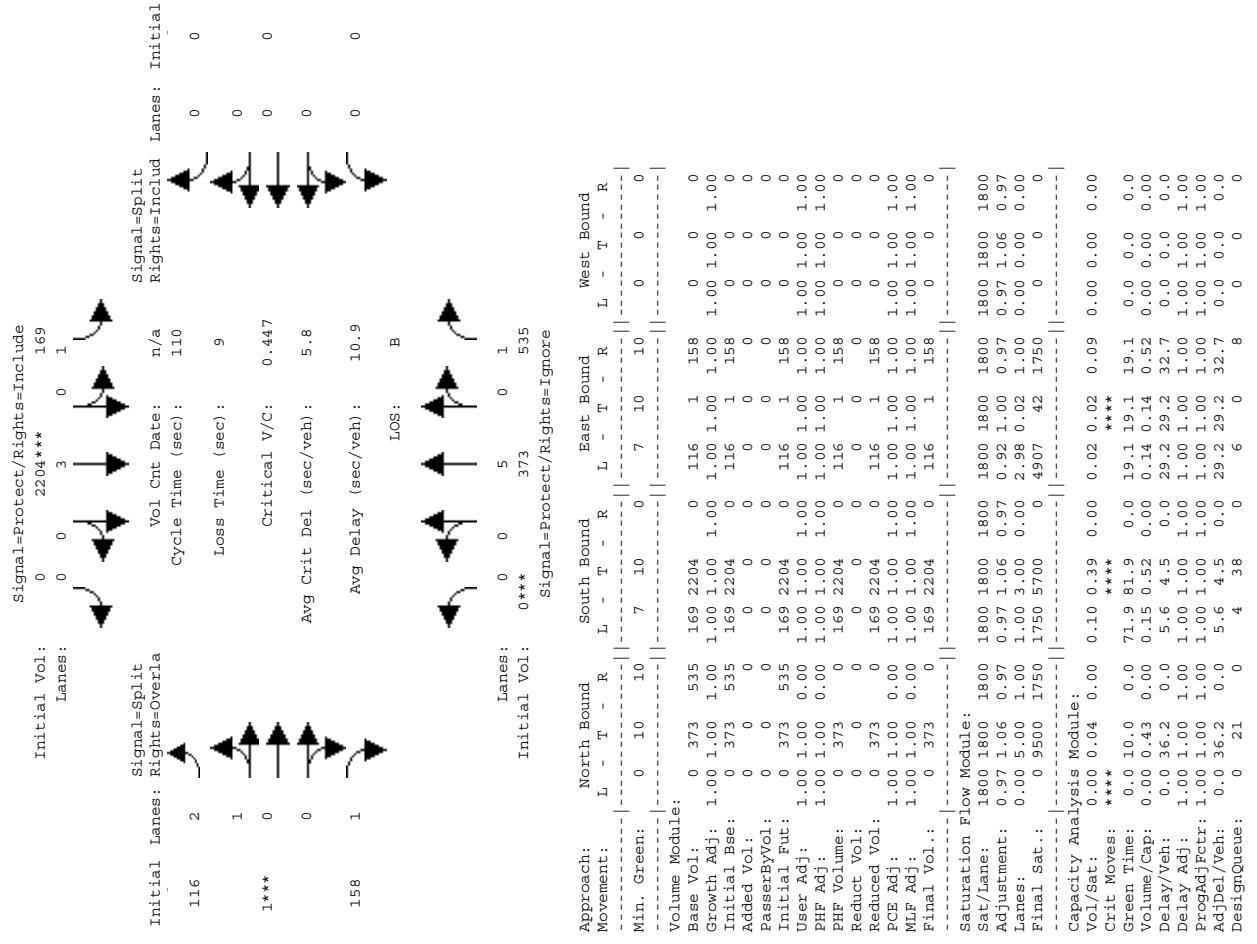
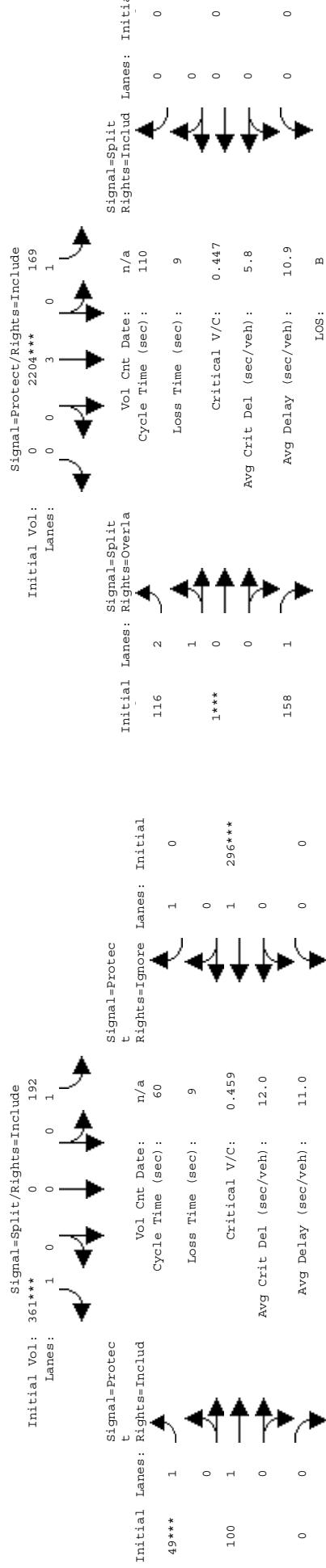
Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Min. Green:	0 0 0 0	10 0 10 0	7 10 0 10	0 10 10 0
Volume Module:				
Base Vol:	0 0 0 0	164 1 0 0	308 42 25 0	63 23
Growth Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Bee:	0 0 0 0	164 0 0	308 42 25 0	63 23
Added Vol:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
PasserByVol:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
Initial Fut:	0 0 0 0	164 0 0	308 42 25 0	63 23
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Volume:	0 0 0 0	164 0 0	308 42 25 0	63 0
Reduced Vol:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
Reduced Vol:	0 0 0 0	164 0 0	308 42 25 0	63 0
PCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
MLF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Vol.:	0 0 0 0	164 0 0	308 42 25 0	63 0
Saturation Flow Module:				
Sat/Lane:	1800 1800 1800 1800 1800 1800	1800 1800 1800 1800 1800 1800	1800 1800 1800 1800 1800 1800	1800 1800 1800 1800 1800 1800
Adjustment:	0.971.06 0.97	1.06 0.97 1.06	0.97 1.06 0.97	1.06 0.97 1.06
Lanes:	0.00 0.00 0.00 1.00 0.00 1.00	1.00 1.00 1.00 0.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00	0.00 0.00 0.00 1.00 0.00 1.00
Final Sat.:	0 0 0 0 0 0	1750 0 1750 1750 1900 0	0 1900 1750 1750 1900 0	0 1750 1750 1900 0 0
Capacity Analysis Module:				
Vol/Sat:	0.00 0.00 0.00 0.09 0.00 0.00	0.18 0.02 0.01 0.00 0.03 0.00	****	****
Crit Moves:	0.00 0.00 0.00 0.34 0.00 0.00	34.0 7.0 17.0 0.0 0.0 0.0	0.97 1.06 0.97 1.06 0.97 1.06	0.97 1.06 0.97 1.06 0.97 1.06
Green Time:	0.00 0.00 0.00 0.17 0.00 0.00	0.21 0.05 0.00 0.00 0.20 0.00	0.97 1.06 0.97 1.06 0.97 1.06	0.97 1.06 0.97 1.06 0.97 1.06
Volume/Cap:	0.00 0.00 0.00 0.47 0.00 0.00	5.3 18.3 11.9 0.0 0.0 0.0	1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00
Delay/Veh:	0.00 0.00 0.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00
Delay Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
ProgAdjFcrr:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
AddJl/Veh:	0.0 0.0 0.0	4.7 5.3 3.11.9 0.0 0.0	16.4 0.0 16.4 0.0 16.4 0.0	16.4 0.0 16.4 0.0 16.4 0.0
DesignQueue:	0 0 0	2 0 5 1 1 0	2 0 5 1 1 0	2 0 5 1 1 0



Level Of Service Computation Report
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PM 2013 Project Alt. 5

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM Peak

Intersection #15: Manila/H St.



1985 HCM Operations (Future Volume Alternative)
Level Of Service Computation Report
PM Peak

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

signal=Protect/Rights=Include

Figure 1 displays two sets of signal timing diagrams for a four-lane intersection. The top set, labeled "Signal=Protect/Rights=Include", shows a sequence of four green phases followed by a yellow phase and a red phase. The bottom set, labeled "Signal=Split", shows a sequence of four green phases followed by a yellow phase and a red phase. The waveforms are plotted against time, with arrows indicating the start and end of each phase.

Lanes: 1 0 4 0 0
Initial Vol: 148*** 371 0

Approach:	North Bound	South Bound	East Bound
movement:	L - T - R	L - T - R	L - T - R
Initial Green:	7 10 0	0 10 10	0 0 0
Volume Module:	- - -	- - -	- - -
Base Vol:	148 371 0	0 1578 226	0 0 0
Highway Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Bse:	148 371 0	0 1578 226	0 0 0
Added Vol:	0 0 0	0 0 0	0 0 0
PassengerVol:	0 0 0	0 0 0	0 0 0
PassengerFut:	148 371 0	0 1578 226	0 0 0
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HFE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HHP Volume:	148 371 0	0 1578 226	0 0 0
Reduced Vol:	0 0 0	0 0 0	0 0 0
Reduced Vol:	148 371 0	0 1578 226	0 0 0
CCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HLF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Vol.:	148 371 0	0 1578 226	0 0 0
Final Vol.:	- - -	- - -	- - -
Saturation Flow Module:	- - -	- - -	- - -
at Lane:	1800 1800 1800	1800 1800 1800	1800 1800 1800
Adjustment:	0.97 1.06 0.97	0.97 1.05 1.00	0.97 1.06 0.97
Passances:	1.00 4.00 0.00	0.00 3.48 0.52	0.00 0.00 0.00
Initial Sat.:	1750 7600 0	0 6559 939	0 0 0
Capacity Analysis Module:	- - -	- - -	- - -
Initial Mov.:	0.08 0.05 0.00	0.00 0.24 ***	0.00 0.00 0.00
Initial Time:	14.9 57.3 0.0	0.0 42.4 42.4	0.0 0.0 0.0
Volume/Cap:	0.62 0.09 0.00	0.00 0.62 0.62	0.00 0.00 0.00
Relay/Veh:	37.7 10.1 0.0	0.0 21.1 21.1	0.0 0.0 0.0
Initial Ldjt:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
ProgAdjRect:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
AdjMov.:	37.7 10.1 0.0	0.0 21.1 21.1	0.0 0.0 0.0
AdjVeh.:	0 11 0	0 63 q	0 0 0
AdjLane.:	8 11 0	0 0 0	0 0 0

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

signal=Protect/Rights=Include

Figure 1 displays two sets of signal timing diagrams for a four-lane intersection. The top set, labeled "Signal=Protect/Rights=Include", shows a sequence of four green phases followed by a yellow phase and a red phase. The bottom set, labeled "Signal=Split", shows a sequence of four green phases followed by a yellow phase and a red phase. The waveforms are plotted against time, with labels indicating the start and end times of each phase.

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Approach:	North Bound	South Bound	East Bound
movement:	L - T - R	L - T - R	L - T - R
Initial Green:	7 10 0	0 10 10	0 0 0
Volume Module:	- - -	- - -	- - -
Base Vol:	148 371 0	0 1578 226	0 0 0
Highway Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Bse:	148 371 0	0 1578 226	0 0 0
Added Vol:	0 0 0	0 0 0	0 0 0
PassengerVol:	0 0 0	0 0 0	0 0 0
PassengerFut:	148 371 0	0 1578 226	0 0 0
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HFE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HHP Volume:	148 371 0	0 1578 226	0 0 0
Reduced Vol:	0 0 0	0 0 0	0 0 0
Reduced Vol:	148 371 0	0 1578 226	0 0 0
CCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HLF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Vol.:	148 371 0	0 1578 226	0 0 0
Final Vol.:	- - -	- - -	- - -
Saturation Flow Module:	- - -	- - -	- - -
at Lane:	1800 1800 1800	1800 1800 1800	1800 1800 1800
Adjustment:	0.97 1.06 0.97	0.97 1.05 1.00	0.97 1.06 0.97
Passances:	1.00 4.00 0.00	0.00 3.48 0.52	0.00 0.00 0.00
Initial Sat.:	1750 7600 0	0 6559 939	0 0 0
Capacity Analysis Module:	- - -	- - -	- - -
Initial Mov.:	0.08 0.05 0.00	0.00 0.24 ***	0.00 0.00 0.00
Initial Time:	14.9 57.3 0.0	0.0 42.4 42.4	0.0 0.0 0.0
Volume/Cap:	0.62 0.09 0.00	0.00 0.62 0.62	0.00 0.00 0.00
Relay/Veh:	37.7 10.1 0.0	0.0 21.1 21.1	0.0 0.0 0.0
Initial Ldjt:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
ProgAdjRect:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
AdjMov.:	37.7 10.1 0.0	0.0 21.1 21.1	0.0 0.0 0.0
AdjVeh.:	0 11 0	0 63 q	0 0 0
AdjLane.:	8 11 0	0 0 0	0 0 0

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

signal=Protect/Rights=Include

Figure 1 displays two sets of signal timing diagrams for a four-lane intersection. The top set, labeled "Signal=Protect/Rights=Include", shows a sequence of four green phases followed by a yellow phase and a red phase. The bottom set, labeled "Signal=Split", shows a sequence of four green phases followed by a yellow phase and a red phase. The waveforms are plotted against time, with labels indicating the start and end times of each phase.

1 0 4 0 0
371 0

Approach:	North Bound	South Bound	East Bound
movement:	L - T - R	L - T - R	L - T - R
Initial Green:	7 10 0	0 10 10	0 0 0
Volume Module:	- - -	- - -	- - -
Base Vol:	148 371 0	0 1578 226	0 0 0
Highway Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Bse:	148 371 0	0 1578 226	0 0 0
Added Vol:	0 0 0	0 0 0	0 0 0
PassengerVol:	0 0 0	0 0 0	0 0 0
PassengerFut:	148 371 0	0 1578 226	0 0 0
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HFE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HHP Volume:	148 371 0	0 1578 226	0 0 0
Reduced Vol:	0 0 0	0 0 0	0 0 0
Reduced Vol:	148 371 0	0 1578 226	0 0 0
CCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HLF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Vol.:	148 371 0	0 1578 226	0 0 0
Final Vol.:	- - -	- - -	- - -
Saturation Flow Module:	- - -	- - -	- - -
at Lane:	1800 1800 1800	1800 1800 1800	1800 1800 1800
Adjustment:	0.97 1.06 0.97	0.97 1.05 1.00	0.97 1.06 0.97
Passances:	1.00 4.00 0.00	0.00 3.48 0.52	0.00 0.00 0.00
Initial Sat.:	1750 7600 0	0 6559 939	0 0 0
Capacity Analysis Module:	- - -	- - -	- - -
Initial Mov.:	0.08 0.05 0.00	0.00 0.24 ***	0.00 0.00 0.00
Initial Time:	14.9 57.3 0.0	0.0 42.4 42.4	0.0 0.0 0.0
Volume/Cap:	0.62 0.09 0.00	0.00 0.62 0.62	0.00 0.00 0.00
Relay/Veh:	37.7 10.1 0.0	0.0 21.1 21.1	0.0 0.0 0.0
Initial Ldjt:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
ProgAdjRect:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
AdjMov.:	37.7 10.1 0.0	0.0 21.1 21.1	0.0 0.0 0.0
AdjVeh.:	0 11 0	0 63 q	0 0 0
AdjLane.:	8 11 0	0 0 0	0 0 0

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

signal=Protect/Rights=Include

Figure 1 consists of two side-by-side signal timing diagrams. The top diagram is for a 2-lane intersection with Signal=Protect/Rights=Include, showing 226 vehicles. The bottom diagram is for a 4-lane intersection with Signal=Split, also showing 226 vehicles. Both diagrams include waveforms for vehicle counts, cycle times, and critical vehicle counts.

Parameter	Value (2-lane)	Value (4-lane)
Initial Vol:	226	226
Lanes:	2	4
Signal=Protect/Rights=Include	0 1 2 3 0 0	0 1 2 3 0 0
Vol Cnt Date:	n/a	n/a
Cycle Time (sec):	110	110
Loss Time (sec):	9	9
Critical V/C:	0.625	0.625
Avg Crit Del (sec/veh):	21.9	21.9
Avg Delay (sec/veh):	20.5	20.5

1 0 4 0 0
371 0

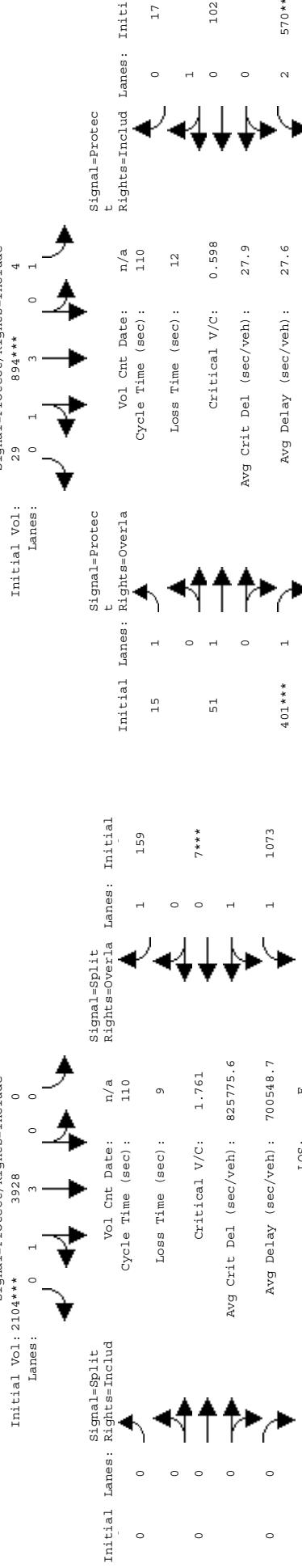
Approach:	North Bound	South Bound	East Bound
movement:	L - T - R	L - T - R	L - T - R
Initial Green:	7 10 0	0 10 10	0 0 0
Volume Module:	- - -	- - -	- - -
Base Vol:	148 371 0	0 1578 226	0 0 0
Highway Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Bse:	148 371 0	0 1578 226	0 0 0
Added Vol:	0 0 0	0 0 0	0 0 0
PassengerVol:	0 0 0	0 0 0	0 0 0
PassengerFut:	148 371 0	0 1578 226	0 0 0
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HFE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HHP Volume:	148 371 0	0 1578 226	0 0 0
Reduced Vol:	0 0 0	0 0 0	0 0 0
Reduced Vol:	148 371 0	0 1578 226	0 0 0
CCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
HLF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Vol.:	148 371 0	0 1578 226	0 0 0
Final Vol.:	- - -	- - -	- - -
Saturation Flow Module:	- - -	- - -	- - -
at Lane:	1800 1800 1800	1800 1800 1800	1800 1800 1800
Adjustment:	0.97 1.06 0.97	0.97 1.05 1.00	0.97 1.06 0.97
Passances:	1.00 4.00 0.00	0.00 3.48 0.52	0.00 0.00 0.00
Initial Sat.:	1750 7600 0	0 6559 939	0 0 0
Capacity Analysis Module:	- - -	- - -	- - -
Initial Mov.:	0.08 0.05 0.00	0.00 0.24 ***	0.00 0.00 0.00
Initial Time:	14.9 57.3 0.0	0.0 42.4 42.4	0.0 0.0 0.0
Volume/Cap:	0.62 0.09 0.00	0.00 0.62 0.62	0.00 0.00 0.00
Relay/Veh:	37.7 10.1 0.0	0.0 21.1 21.1	0.0 0.0 0.0
Initial Ldjt:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
ProgAdjRect:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
AdjMov.:	37.7 10.1 0.0	0.0 21.1 21.1	0.0 0.0 0.0
AdjVeh.:	0 11 0	0 63 q	0 0 0
AdjLane.:	8 11 0	0 0 0	0 0 0

Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 5

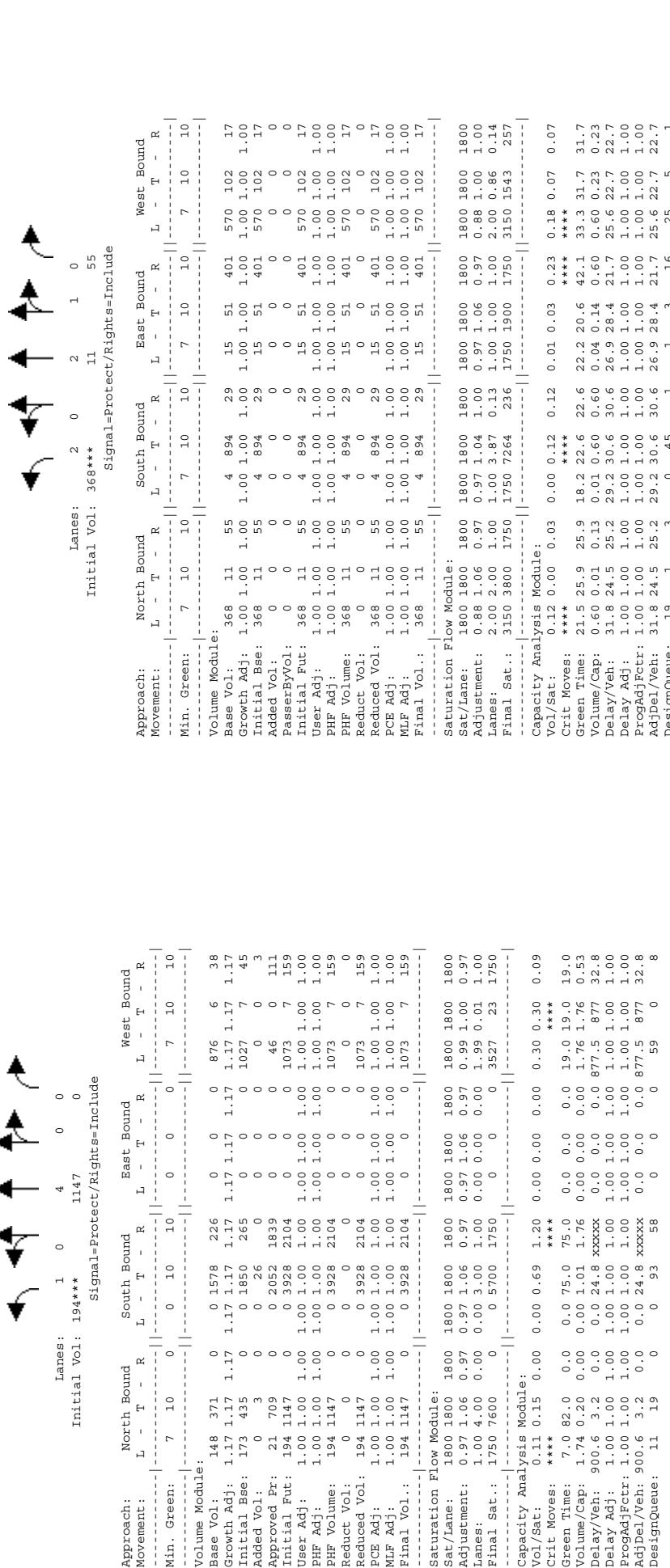
Level Of Service Computation Report
1985 HCM Operations (Future Volume Alternative)
PM Peak

Intersection #17: 237 WB Ramps/Mathilda

Signal=Protect/Rights=Include



Signal=Protect/Rights=Include



Level Of Service Computation Report
985 HCM Operations (Future Volume Alternative)
PM 2013 Project Alt. 1

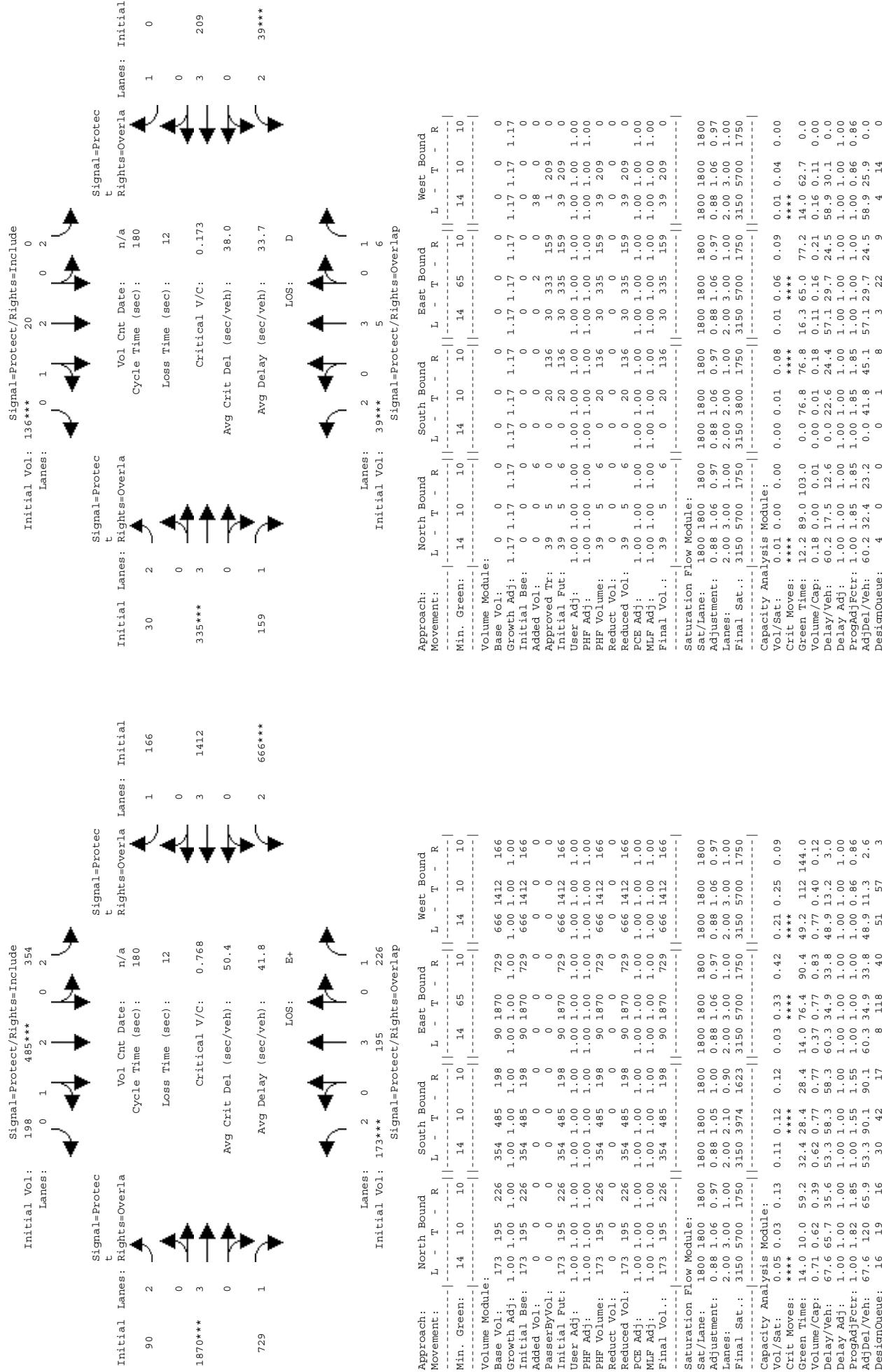
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Intersection #19: Central/Mary

